

AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

MAY 15, 1935

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VIBURNUM PRUNIFOLIUM

Equipment for Garden Lighting

Revived Interest in Old-Time Herbs

A. A. N. Cincinnati Convention Plans

AMERICAN NURSERYMAN

Chief Exponent of the Nursery Trade

F. R. KILNER, Editor

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WHAT'S AHEAD FOR A. A. N.?

The sixtieth anniversary of the American Association of Nurserymen will be celebrated only two months hence. Early announcement of the plans for the convention at Cincinnati, on another page of this issue, recall that the most important matter to come before the meeting will be consideration of the revitalization plan formulated by the committee appointed a year ago.

At that time nobody had very much business, and all had plenty of time to think about the problems of the association and of the industry at large. Much consideration was given to both, and the ideas brought forward at the New York convention and in subsequent discussions at state meetings embodied many suggestions for improvement.

The increased demand for nursery stock this spring has revitalized a good many businesses that their owners thought pretty nearly dormant. During the rush of digging and shipping, it may have driven from the minds of many nurserymen all thought of anything but caring for orders.

But many problems will confront the industry in good times as well as bad. Our business will fare better if an association of adequate strength and representation is able to function in behalf of the industry. So, when the spring rush begins to subside, nurserymen may again take thought of their larger interests.

Following the preliminary program presented by the Costich committee and the widespread discussion before various trade organizations, the ideas should be carried to fruition, not permitted to fall by the wayside or remain in abeyance for lack of prompt attention at the Cincinnati convention.

Revival of interest and discussion may well precede the convention, and the columns of this magazine are open to those who wish to express their ideas in the June issues, in order to engender interest in the enlarged activity and achievement of our national association.

CHARACTER is just as definite a part of a company or business establishment as it is of individual persons. In fact, the character of a firm really reflects the character of the individuals in it.

The Mirror of the Trade

NATIONAL BOTANICAL GARDEN.

Under plans now being considered by Congressional leaders, Washington, D. C., may have a botanical garden to rival the famous Kew Gardens in London and the Jardin des Plantes in Paris.

Under the sponsorship of Representative Kent E. Keller, of Illinois, it is reported that a bill will be introduced in Congress soon that will authorize enlargement of the existing botanical garden of the federal government, rehabilitation of the federal 13-acre nursery at Anacostia, Md., and utilization of the national arboretum to produce a wide variety of plants and shrubs.

The Keller bill will incorporate the recommendations of a special civic committee of thirty members that has been studying the problem of rehabilitation of the government's greenhouse facilities for some time. However, despite the scope of the program as outlined, its cost is considered relatively inexpensive—less than \$500,000.

The control of the botanical gardens will remain with Congress under the direct supervision of floricultural and horticultural experts. It is planned that it will be utilized for educational purposes with lecture courses and monthly displays.

The special committee under the direction of Frederick Delano sent letters to 400 gardens and nurseries throughout the world, enlisting their aid in the form of recommendations in formulating plans to make the Washington botanical garden second to none. The material gathered is incorporated into the bill, drawn up by Representative Keller. Senator Alvin Barkley, of Kentucky, will cooperate in its passage in the Senate.

LANDSCAPING IS REVIVING.

In a column article commenting on the increased real estate activity in the suburban area about the largest city in the country, the New York Times of May 5 remarked on the increasing amount of landscaping work going on in many sections of the district.

Despite the depression years, the majority of suburban dwellers have maintained the rural beauty and charm of the gardens around their houses. For the most part they are small in size and entail no excessive expense, but landscaping as it is understood in the broader sense of tree planting and the laying out of lawns and flower beds in home development centers has suffered, as many other things, by economic limitations. This year the desire for more extensive landscaping is reviving.

From the Amawalk Nursery, in Westchester, comes the report that for the first time in four years many orders for large trees have been received from different sections of the metropolitan area.

"Orders for more large trees for replanting purposes have been received this spring from many estate owners in Westchester and Long Island than at any period since 1931," states Miss Evelyn W. Smith, of the Amawalk Nursery. "Ten large Norway spruce trees were sent to one estate and many requests have been made for large beech trees. Since the middle of April an average of

four truck loads a day of trees and shrubs have gone out to more than a score of suburban communities."

ILLINOIS SOIL-EROSION PLANTING

One hundred C. C. C. boys are engaged in reforestation of badly eroded slopes in the Illinois area of the United States soil erosion service, William F. Peel, forester, reports. More than 200,000 trees are being set out in McLean and Ford counties this spring. The total area covered by the plantings will be 200 acres. The trees being used in these plantings consist mainly of black locust.

Trees are being set on areas where the slopes are too steep for cultivation and where erosion has become serious. In addition to controlling erosion, these tree areas will serve as good cover for game birds and other wild life, the supply of which has become badly depleted in that section of Illinois because of increased land clearance and cultivation.

VIBURNUM PRUNIFOLIUM.

Blooming at about this time in the latitude of New York and Chicago is *Viburnum prunifolium*, the large shrub illustrated on the front cover. Its range is from Connecticut to Florida west to Michigan and Texas, so that naturally its blooming season varies considerably—approximately from April to June. The flowers are pure white, appearing in flat heads (cymes) up to four inches across.

Although the black haw, as this large shrub is commonly known, is quite similar to *V. Lentago*, the nannyberry, or sheepberry, and *V. rufidulum*, the southern black haw, it has the advantage of growing only about fifteen feet high, whereas the last two mentioned get up to twenty-five to thirty feet under favorable conditions.

Whereas the nannyberry thrives in shady and moist places, the black haw prefers drier situations and more sunshine. The foliage changes color in the fall, about the time that the attractive frosted bluish black berries ripen. The fruits are oval, somewhat flattened, and can be eaten. Propagation is from seeds or hardwood cuttings. Wash the pulp from the seeds as soon as ripe. Gather and sow them as early as possible in fall. This shrub is sometimes known as the stagbush.

BACCHARIS HALIMIFOLIA.

Referring to the illustration and description of *Baccharis halimifolia* in the April 15 issue of *The American Nurseryman*, this shrub is native to east Texas and northern Louisiana and shows itself conspicuously in plantings in the late fall, with its bank of feathery white, when other shrubs have retired for the season. It is good as a specimen plant or for "filling in" in border plantings. It is a good broadleaved evergreen. Locally it answers to the name of winter willow. We are growing it commercially.

Verhalen Nursery Co.,
Scottsville, Tex.

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AMERICAN NURSERYMAN

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The Chief Exponent of the American Nursery Trade

*The Nurseryman's Forte:
To Make America More Beautiful and Fruitful*

Vol. LXI

MAY 15, 1935

No. 10

Equipment for Garden Lighting

**Illumination of Landscape Plantings Prolongs Day in Nursery
Display Grounds and Adds to Enjoyment of Home Gardens**

There is double interest for nurserymen in recent developments in the art of garden lighting. On the one hand, the ideas suggest how to obtain increased value from display grounds, by prolonging their usefulness in the evening. On the other hand, knowledge of the subject that is possessed can be passed on to home garden owners so that their pleasure in their own plantings will be heightened and their purchases stimulated accordingly. Sales of garden lighting equipment will also prove an additional source of profits.

General flood lighting can be accomplished at little effort and expense. There is a choice between lights for mounting well above the garden, as from a gable of a house or in the branches of a tree, or for ground use, with the rays directed upward over the spot of interest. For long-distance illumination, strong wattages are required, but 75 and 100-watt bulbs can be used in inexpensive reflectors within a range of ten feet to light

uniformly an area about eleven to twelve feet in diameter.

For permanence, weatherproof reflectors are essential; corrosion must be guarded against and electrical contacts protected from moisture. Brackets with adjustable mountings are needed for affixing the lights properly. The selection of the correct reflector shape is also a consideration. Dull green finishes on the outside are desirable to make the equipment as inconspicuous as possible when used among plant foliage. Lights frequently come with a removable spike several inches long that facilitates ground mounting.

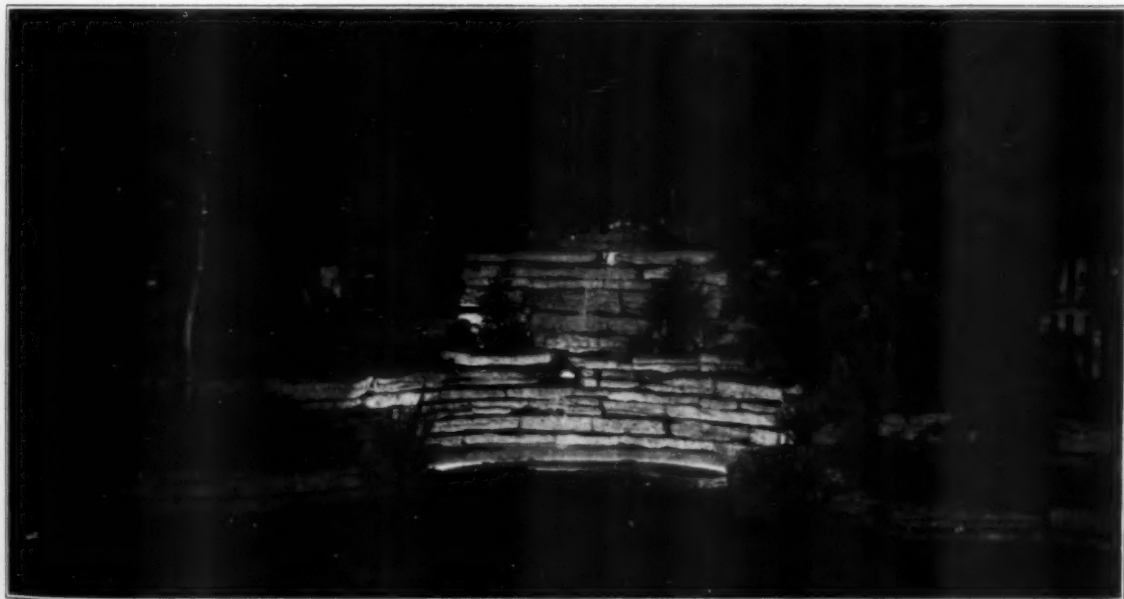
Equipment Considerations.

Rubber-covered extension cords are needed with outdoor lights. Inexpensive weatherproof outlets of molded rubber or porcelain can be obtained, if it is not feasible to run the extension from indoors. Suggestions on fuse equipment, when adding to the power load, should

be sought from the local electric utility company.

The common flood light meets a host of useful ends in the garden, so that consideration of it is important. Although not strong enough to provide general illumination, the small flood light is invaluable for bringing out particular points of interest in plantings. Placed on the ground, preferably hidden by shrubbery, a small light can be directed on a rockery, a clump of trees, a statue, a summerhouse, a bench or other features. In many instances a 40-watt lamp is all that is needed.

A tree or statue is most effectively illuminated by two lights, either of different intensities or placed at unequal distances from the object to be lighted. One method of lighting a tree is to adjust a flood light flush with the ground level below the branches, protecting it with an encircling metal shield that resembles a porthole ventilator and projects slightly from the ground. The up-



Pools Such as This, on Estates or Display Grounds, Made Effective at Night by Illumination.

ward rays are directed entirely on the tree by the shield. Louvers can also be attached to the rim of the light to eliminate glare. Green or bluish green filters will bring out the natural color of the leaves.

Concealing Lights.

Another plan is to sink the flood light in the top of a hedge, if one is convenient, or attach it to a trellis, adjusting the reflector so that the proper point is covered by the rays. If no planting is available to hide the lights, one can obtain decorative metal shields to disguise them. Recesses in garden furniture can also hold lights.

An accompanying illustration shows how a rockery and pool can be lighted, using three units of different intensities. A diffused beam is provided by a 150 or 200-watt lamp mounted in a tree at the left. At the right is a lamp of the same power as the first, but with a controlled focusing mechanism. In the shrubbery at the back is a 75 or 100-watt lamp, adapted for short-range illumination of the water. The rest of the equipment consists of No. 12 lead-covered wire, laid underground; watertight plug receptacles, and watertight attaching plugs.

Investment Warrants Lighting.

Inasmuch as the cost of constructing a rockery and pool may run into large sums, the additional pleasure that can be derived from them through evening illumination should be a strong point of consideration. The relative expense of the equipment and power is small.

Ingenious methods have been devised to conceal lights in decorative equipment. For example, if a small flower bed is to be illumined, one can mount on a rod in the center of it a bird house on a shallow square reflector that holds two ordinary house lamps of 50 or 75 watts. The light from these will bring out the colors of the flowers.

Small Lights.

One may have a clump of white irises that would be more interesting at night if accentuated by a little illumination. For this purpose, there are available metal cut-outs of birds, flowers and animals on a rod, that shield a small electric light bulb of 25 to 40-watt rating. Some of these cut-outs have openings that permit the illumination of the brightly painted shield also, but most of the light is reflected on the plants before which the lamp is placed. The light is equally useful placed before a bird bath.

Bird baths, popular as daytime decorations, are logical centers of emphasis in the nighttime setting and they are ideal for concealing units for general lighting when three sides of the pedestal are decorative luminous panels and the fourth permits the light to be directed through stippled glass from three low-powered flood lights arranged vertically. A small bulb at the base and two more at the top, in colors, if wanted, provide the illumination for the pedestal itself.

Panels.

Somewhat similar are various forms of panels. A popular style is a vertical arrangement that permits mounting of five reflectors on the side toward the point to be illuminated. The unit has a metal trough at the base on the front, for the mounting of small lights that throw their rays on the panel itself, which is decorated. Such panels are particularly

appropriate to flank the entrances or main approaches of a garden. One of these panels is shown here.

For the driveway into display grounds, temporary pylons of wood or metal frames covered with lacquered muslin can be used for special occasions. These should be placed on either side of the entrance. Permanent driveway pillars can be illuminated by flood lights below ground level in a metal enclosure, such as a hot air register box having a grilled top for the protection of the light.

Other Equipment.

Mushroom-type lights are popular. Some of these have a cone-shaped top, made of prepared cloth in various colors, held on a fluted metal standard. The rays from the light are largely reflected to the ground in a fairly large radius, but some light thrown from a spillband at the edge illumines the cloth top. Concrete "mushrooms" are also used to hold small lights and are useful for pathway illumination.

Electrical equipment manufacturers have devised garden lighting kits that contain a variety of materials, including one or more flood lights, light shields, cables, plugs, etc. They have also worked out special units for particular places. An example of the latter is a rock light of tufa, carved out to hold a 40-watt lamp, useful for low-power illumination in the rockery or along a path. It is furnished ready for installing, with waterproof wire, socket and plug.

For Temporary Installations.

For temporary decorative work, where it is necessary simply to make up strings of lights, an inexpensive molded weatherproof socket is extremely useful. It is not necessary to strip the wires when using this socket. The contact screws are sharp pointed, so they puncture the insulation and make contact with the wire. The wires are held rigidly in place by the socket cap, which is screwed down tight to the socket body. This type of socket can be disconnected from the wire when desired and can be used over again in the same manner.

When the garden furniture includes a table surmounted by a beach umbrella, a colorful effect can be obtained by in-



Path Marker Beside Pool.

AMERICAN NURSERYMAN

stalling one or two lamps in a reflector fastened on the upright to throw the rays into the umbrella top. The necessary wiring can be done through a hollow upright.

"Lighting for Decoration and Festivity," by G. R. La Wall and C. M. Cutler, a publication issued by the engineering department of the General Electric Co., at Nela Park, Cleveland, O., contains many additional suggestions of value on this subject of garden illumination.

NORTH JERSEY MEETING.

Publicity Project Discussed.

A meeting of the North Jersey Metropolitan Association of Nurserymen was held at the Passaic county courthouse, Paterson, N. J., May 8.

Herman Rohsler, 106 Hartman avenue, Garfield, N. J., applied for membership.

The members then carried on with the work of the better housing exposition, which the executive and planting committees had prepared for them. The exposition is to be held in the armory at Paterson June 10 to 15, inclusive. The members plan to plant the entire entrance. The association will have a booth where it will give information to all who are interested in gardens. The members stationed at the booth will put down the names and addresses of all persons making inquiries and what they are interested in. These names will later be distributed among the membership for leads. On the planting the emblem of the association will be prominently displayed.

As a special prize, Paterson Chamber of Commerce Exposition, Inc., is giving away a \$12,000 home. The association will plant the grounds and make the lawn at this home, on Forty-first street, between Seventeenth avenue and Park avenue, Paterson. It will be officially opened May 28. The chamber of commerce will give out leaflets, which will have the names of all the contractors who worked on the house. The association will also display its emblem on the lawn of the house.

Procedure Scheduled.

Work on the project will start Saturday, May 18. Some of the members will shortly start hauling top soil for the job. May 23, the membership will join in the planting job in the same way it did at the courthouse.

May 27, in the evening, the members who volunteered will go to the home of Paul Hoverman and decorate his truck as the association float in the parade marking the official opening of the exposition May 28.

It was felt that the final discussion of material to be used at the exposition at the armory should be left for a special meeting to be called later.

President Hess then read the first report from the garden contest committee of the New Jersey Association of Nurserymen, which was approved by the group. Paul Hoverman made a motion, seconded by C. A. Kievit, that the secretary write the state association that the group will back up this movement and enlist the aid of Mr. Wettyn and Mr. Stone's broadcast on the radio to stimulate interest in the contest.

An executive and planting committee meeting was scheduled at the home of H. Deverman, 1465 Van Houten avenue, Clifton, May 15, to clear up details.

William Hallicy, Sec'y.

Revived Interest in Old-Time Herbs

Among Material for Old-fashioned Gardens, Herbs Receiving Renewed Attention Are Described by Michigan Grower

Revival of interest in the growing of old-fashioned plants and flowers has been marked in the past few years, especially so in the case of those usually classed as herbs. Some of these were grown for centuries up until 1800, but since that time, for one reason or another, have been dropped from cultivation and in many instances almost forgotten. Many of these old favorites had aromatic, culinary or medicinal virtues well known to the early poets and writers and thus carry with them rich literary and historical atmosphere.

Even within the trade, growers have been attracted to herb culture, first as a hobby, perhaps, then later for the commercial possibilities presented. Tom Pearson, secretary of the Grosse Pointe and Eastern Michigan Horticultural Society, Grosse Pointe, Mich., and also a representative of W. M. Hunt & Co., New York, began to grow herbs for his own pleasure three years ago. They appealed to him so much that he began to persuade others to their virtues and instituted a campaign to recreate and encourage interest in herbs and other old-fashioned plant material in his section of Michigan.

Featured at Shows.

Mr. Pearson found a ready response to his efforts, developed chiefly along purely educational lines. He has made displays of herbs and other old-time plants at the exhibitions of the Grosse Pointe and Eastern Michigan Horticultural Society. He has also given talks on the subject before garden clubs. Men, he found, seemed more interested than women, a fact he feels is due to the depression, which gave some persons more leisure to enjoy the simple things of life.

Two description cards to be used at shows in connection with his displays are of interest. These are light green file cards, 3x5 inches. On one, lines are provided for the botanical name, common name, native habitat, date of early listing, historical data and cultural pointers.

A second card permits more detailed information concerning the uses of the plant. Besides space to show the botanical and common names of the subject, there is a place to check the chief uses and reputed virtues—culinary, medicinal, coloring and aromatic—and the garden and landscape values—in border, for hedge, as edging plant, for rock garden, for cracked path, as ground cover, in sun, for semishade and for a moist locale.

Some Perennial Forms.

In 1932, Mr. Pearson published a leaflet entitled "Old Garden Herbs," in which he gave the botanical name, the common name and brief remarks on forty-four perennial herbs and a dozen annual varieties and such as are best grown from seeds. Creating an atmosphere for the subjects was the main objective in this publication.

In the following paragraphs, Mr. Pearson describes his selection of the

best of the old herbs in the hardy and tender perennials:

Balm, also known commonly as lemon balm and botanically as *Melissa officinalis*, grows twelve to twenty-four inches and has a spreading habit. It is easily grown from seeds, cuttings or root divisions. It should be pinched back occasionally during the growing season, to promote better foliage.

The leaves have a delicious lemony mint scent, making it a splendid rival of lemon verbena, with the added virtue of being perfectly hardy; it will thrive in any good garden soil. Also, it makes a fine pot plant. Medicinal virtues are claimed for the plant, balm tea being sometimes used to cure colds.

Burnet, *Poterium Sanguisorba*, is a neat, low-growing plant, with rosettes of attractive blue green foliage. Its simple flowers, on 12 to 15-inch stems, rise from the center. It can be grown from seeds or root divisions. Burnet is an old-time medicinal plant and was also used in salads.

Camomile, *Anthemis nobilis*, is another low-growing herb, with dainty fern-like foliage and small white daisy-like flowers having a yellow center. It will grow from seeds in any garden soil, but it is not hardy in Michigan.

Chicory.

Chicory, or seecory, is *Cichorium Intybus* botanically. It is of European origin, but as a garden escape it is now to be found in large colonies, usually by the roadsides, throughout the eastern United States. This is the true chicory, a valued herb of Old World gardens. The blanched leaves are still used for salads. The flowers were used in cordials and, candied, for sweetmeats, while the roasted roots were employed to flavor coffee. Few flowers, cultivated or wild, give to the landscape such a clear, stainless blue as chicory.

Chives, cieves and seives are all terms for *Allium Schoenoprasum*. This small perennial onion-like plant has dark green grass-like foliage, with flowers clover-like in shape and purplish rose in color. It is propagated from seeds and from divisions of bulbous clumps.

Chives make desirable edging plants. They are mentioned in a fifteenth century book and at present are gaining favor for many culinary purposes.

Costmary, sweet mary and alecost are various names given *Chrysanthemum Balsamita*, a native of western Asia, from which it was introduced to Europe and in turn brought by the early settlers to America. Frequently, costmary and rosemary are confused, but the two plants have no resemblance. They are linked by the fact that the name sweet mary is sometimes applied to both and by the fact that in early church days both were dedicated to the Virgin Mary.

Costmary grows about two and one-half to three feet. The leaves are slightly downy and gray green in color, long, narrow and finely toothed. When bruised, the leaves give a pleasant minty smell. The flowers, in August, come in terminal clusters of twelve or so and are

round, flat and yellow, a trifle smaller than those of tansy. The plant is easily propagated from cuttings.

Elecampane.

Elecampane, *Inula Helenium*, is not a pot herb or an aromatic plant, but is included because of its historical associations. For a long time it has figured in a cough medicine. It is a tall stout plant, growing from three to six feet, having yellow daisy-like flowers measuring two to three inches across. The subject is found naturalized in Michigan, usually in low locations, and thrives best in a deep clay loam.

Germander, *Teucrium Chamædrys*, is a perennial shrubby plant grown for its foliage, which is practically evergreen. Growing only about ten inches, it makes a splendid edging plant and is used for that purpose on several estates about Cleveland, O. The flowers are rose purple and quite attractive.

Germander is a native of the Orient and a valued medicinal herb of the middle ages. Any good garden soil suffices for it. It is best grown from cuttings started in early spring.

Horehound.

Horehound, *Marrubium vulgare*, is another plant from the Old World which is widely naturalized throughout the country. Though rather weedy-looking, the plant is nevertheless attractive with its woolly gray green stems and foliage and small cream-colored flowers from late June to September. It does best in poor, light soil. Propagation is accomplished by seeds, cuttings or divisions. Horehound is used in medicine and for candy.

Hyssop, *Hyssopus officinalis*, is an attractive subshrub, native to Europe, and well deserves a place in any garden. It grows from twelve to eighteen inches, with dark green foliage, which is strongly aromatic. From June to September it carries spikes of dainty blooms, usually blue, but sometimes varying to pink and white.

The plants can be trimmed back to make good edging subjects. They prefer a chalky soil, but will do well in any good soil that is not too rich. They come readily from seeds.

Lavender.

Lavender, *Lavandula vera*, needs no description. It is undoubtedly one of the best gray-foliaged plants for the flower border. In culture it needs a light soil, perhaps a little gravelly, with a sunny location. It is best grown from slips, but can be started from seeds.

The dwarf Munstead strain is an introduction of the late Miss Jekyll and is strongly aromatic and an asset to any garden.

Marjoram, *Origanum vulgare*, the wild marjoram, is not to be confused with *Origanum Majorana*, sweet or knotted marjoram. The former makes a splendid ground cover in an open sunny location. It is an attractive though somewhat sprawling plant, growing from twelve to eighteen inches. From early

July to September, the stems are covered with flat-topped clusters of pink blooms. Propagation is by seeds or cuttings. *Origanum* means "joy of the mountains."

Mint.

Mint, *mentha*, includes several varieties, as follows: *Mentha spicata* (*M. viridis*), spearmint; *Mentha piperita*, peppermint; *Mentha rotundifolia*, woolly mint; *Mentha sativa*, water mint; *Mentha Pulegium*, pennyroyal, and *Mentha Reiquienii*, Corsican mint.

Spearmint and peppermint are the two varieties in domestic use in food and medicine. Both varieties need good rich fertile soil, with plenty of moisture. All the mints are best propagated by pieces of runners.

Pennyroyal, a favorite in Elizabethan days, and Corsican mint are not hardy in Michigan. The former will self-seed, but the latter, a little gem, dies out entirely. *Mentha rotundifolia* and *Mentha sativa* are attractive gray-foliaged varieties.

Rosemary, *Rosmarinus officinalis*, is native to the Mediterranean regions and does not take kindly to northern climate; hence it must be treated as a greenhouse perennial and only planted outdoors from May to early September.

Rosemary provides a most delightful shrub. The whole plant, and especially the leaves and flowering top, is fragrant. The small long narrow leaves are dark green on the upper surface and a silvery gray underneath. The plants usually grow from fifteen to twenty-four inches, in the writer's experience. They can be propagated by cuttings and from seeds and need a dry, sunny position in a well drained soil.

Rue.

Rue, *Ruta graveolens*, provides an attractive well formed plant growing about fifteen inches, with blue green foliage and simple yellow flowers in early June. Rue is one of the bitter herbs, second only to wormwood. It is also one of the most ancient herbs. This is one of the few plants that keep their foliage looking good well into December. *R. chalepensis* is an interesting fringed variety. Rue is easily grown from seeds, preferring a moist situation in well drained garden soil.

Santolina, also called French lavender, or lavender cotton, is *Santolina Chamæcyparissus* botanically. It is an aromatic evergreen perennial, with silvery white foliage. Useful for the rock garden and as a border subject, it is also worth while for edging flower borders or walks, growing about ten inches. In fact, it was a favored edging plant in the knot gardens of olden days. Growth is best when good well drained light soil and sunshine are provided. Cuttings in August furnish propagating material.

Sorrel, *Rumex acetosa*, is rarely grown nowadays, but is one of the culinary herbs still much used in France. It grows about two and one-half feet and its foliage is dock-like. One can start it from seeds in any good garden soil, where it will spread rapidly.

Southernwood.

Southernwood and lad's-love are common names for *Artemisia Abrotanum*. This is a shrubby plant with grayish green foliage, strongly aromatic. The growth is two and one-half to three feet. This variety of *artemisia*, sometimes

called old man, is one of the most worth-while of the species. It rarely blooms, but when it does the flowers are yellowish white, borne in loose panicles.

A variety of southernwood sometimes to be found in old gardens is more spreading in habit and much greener than the true type. It also flowers more freely and has a distinct aroma.

A. Abrotanum is propagated freely from cuttings and from root divisions and thrives in a good medium garden soil and a snug location. Another *artemisia* which should be included in every herb garden is wormwood, *Artemisia Absinthium*.

Sweet cicely, or myrrh, *Myrrhis odorata*, is native to the mountains of Savoy and is naturalized throughout the British isles. This is a splendid ground cover plant for semishade, growing about eighteen to twenty-four inches, with fern-like foliage and small white flowers. It reproduces freely from seeds.

Tansy, *Tanacetum vulgare* var. *crispum*, is a robust plant, growing about two and one-half feet, with feathery dark green foliage, pleasantly aromatic. The flowers in July and August come in clusters and look like small yellow buttons. Propagation is by root divisions and seeds. Sunshine and a medium heavy soil are preferred.

Thyme.

Thyme, *Thymus vulgare*, forms small aromatic shrubby plants, with grayish green leaves, growing about six inches. The flowers are pink, appearing in May and, if cut back, again later on. The plant needs protection in winter. One of the most useful culinary herbs, thyme is also used in medicines and perfumes.

Winter savory, *Satureia montana*, when well grown is two feet across and about ten inches high. This is one of the most decorative of the herbs. The foliage, evergreen, is bright green in color and pleasantly aromatic, being used much as a condiment in foods and for flavoring certain liqueurs. The flowers are small and white. Propagated from seeds, slips and divisions, the plant does well in a light soil.

Woodruff, or sweet woodruff, *Asperula odorata*, is another fine ground cover plant for semishade in a woodland situation. The clumps will grow about fifteen inches across and eight inches or so in height. The plant blooms in May and it is covered with little white star-like blooms. The young growth is especially fragrant in spring, and dried sprays keep their aroma for a long time. Woodruff is used for flavoring wine. Propagation is best from root divisions.

Some perennial herbs, taken from Mr. Pearson's earlier listing, with mention of their uses, are as follows:

Anthemis nobilis, camomile—Formerly smoked in pipes to cure asthma.

Archangelica officinalis, angelica—Stalks were candied for sweetmeats.

Artemisia Absinthium, wormwood—Used in the preparation of absinthe.

Artemisia dracunculoides, tarragon—Makes a famous vinegar, also tartar sauce.

Artemisia maritima, old woman—Noteworthy for its dainty foliage; resembles *A. Abrotanum*.

Armoracia, horse-radish—Roots used in making horse-radish sauce.

Crocus sativus, saffron—Used to make commercial saffron.

Foeniculum dulce, fennel—For decorating fish and other dishes.

Fumaria officinalis, fumitory—Used in former times to make a face wash.

Glycyrrhiza glabra, licorice—Old-fashioned medicine for coughs and hoarseness.

Monarda fistulosa, bergamot, or bee balm—Beloved by bees; oil of bergamot is used in perfumery.

Nepeta Cataria, catmint—Liked by cats.

Prunella vulgaris, self heal—Said to be a remedy in case of cuts.

Pulmonaria virginianum, mountain mint—Attractive foliage; strongly aromatic.

Salvia officinalis, sage—Useful kitchen herb; much used in seasoning and dressing.

Satureia montana, winter savory—Used for flavoring soups and stews.

Thymus citriodorus, lemon thyme—Lemon-scented variety. Rarely seen nowadays.

Verbena officinalis, vervain—A sacred plant of ancient times.

Valeriana officinalis, valerian, or garden heliotrope—Valued for its medicinal qualities.

Annuals and Biennials.

Of the old annual and biennial herbs, the following are all quite easy to grow and can be sown outdoors in early May, when the soil is warm. Practically all of these should be grown in light rich soil, in a sunny location. The varieties marked with a star are biennials. Sweet basil should have a place in every garden.

Anise	Dill
Basil, sweet	Fennel, sweet
Borage	Fennel, Florence
*Caraway	Marigold, pot
*Chervil	Marjoram
Coriander	*Parsley
Cumin	Savory, summer

SUNDAY AT WEISER PARK.

From 150 to 200 automobiles lining the roadside and packed in a convenient parking lot. Not less than 350 visitors strolling at one time through the display gardens, admiring and exclaiming over the gorgeous showing of tulips in about fifty varieties, primulas, *Phlox subulata*, French lilacs and other spring flowers. A dozen salespeople wrapping plants and packages, answering questions and booking orders.

That was the cheering sight that greeted the writer when he stopped his car at Weiser Park, Pa., Sunday afternoon, May 12, in response to an invitation from H. G. Seyler, secretary of the Farr Nursery Co. In area the Farr display gardens cover about two acres extending along the main highway, twelve miles west of the city of Reading. The landscape was planned by C. M. Boardman, vice-president of the Farr concern. Special effort was given to grouping individual varieties, thus giving the details of color and form. Labels were clearly written and placed where they could be plainly seen.

The effect was much like walking through a botanical garden—and this feeling was heightened when the visitor realized that at no time was he approached by a salesman unless a desire for service was indicated.

It is expected that French lilacs and tree peonies will be at their best about May 20, with irises and peonies in full flower during the early part of June.

The display garden was planned with two objects in view—first, to interest people in better plants and better gardens. The crowd on Sunday indicated that the goal is being reached. The second object was to increase sales on the cash-and-carry plan. The writer did not see the sales sheets, but he did hear the merry tinkle of the cash register bell, and he did see the plants carried away. So it looks like a fulfillment of both objects.

Well kept roads through the nursery permit the visitor to drive over the 128 acres and inspect the blocks of evergreens, shrubs and trees and some 2,000 varieties of perennials.

E. F. R.

F. A. Wiggins, Toppenish, Wash., last week left the New York hospital where he had been confined for several weeks after a speeding automobile knocked him down, breaking one of his legs in two places and causing severe bruises.

Building the Rock Garden

Construction of Level Areas and Ledges Is Discussed in the Final Article of This Series by William H. E. Beckstrom, F. R. H. S.

It is common for natural rock formations to have some level or fairly flat surfaces to offer contrast to ruggedness and relieve consistent irregularity. This feature may supply the serviceable area of the rock garden, as it provides a location for a bench, rustic table or chairs in which to recline and enjoy the beauty of the surroundings.

These level areas may be constructed along with the path and at times become a part or all of it, especially where it is possible to extend the path into the bays and recesses of the garden. These somewhat sheltered and secluded bays offer ideal settings for a rustic wood or stone bench. A more desirable treatment would be to fashion a rugged built-in bench at this point during the construction of the garden. If so treated, the bench should be a part of the general rock formation at this point. A projecting ledge upon which one may comfortably rest serves the purpose.

Series of Level Areas.

Flat areas may be laid out in a retreating and rising series of stages. If such is the case, irregularity of the front edge of each stage is obviously desirable.

Numerous crevices throughout the level area will facilitate the growing of many choice and often reputedly difficult alpine. Such crevices should be firmly packed with leaf mold, sand and stone chips. Effort should be expended toward matching stones, so that the crevices will appear as natural fissures and not like joints in crazy paving. The crevices, or cracks, should grow wider as they approach the outer edge of the level area or change of formation. Large stones that have fairly flat tops and are thick enough should have crevices eighteen inches or more deep between them.

Talus Formation Useful.

The edge or outer boundary of such a level area may form a finishing point for the rockery. If this edge is made precipitous, a talus-like formation may be constructed at the base. The procedure for this is as follows. The area at the base of such an area should slope gently away from the face of the ledge. Various-size stones of the same type as those used in the formation above are interspersed with leaf mold and sand to the extent of fifty per cent each of soil and stone. This mixture is then spread over the slightly sloping area to a depth of eighteen inches or more. An inch or so of stone chips, to which no soil has been added, is then used as a top-dressing over the area.

Such an arrangement has practically all the advantages of the dry moraine or scree as found in nature. Its addition to the rock garden will enable one to grow a vast number of choice and reputedly difficult alpine that dislike moisture about their crowns. An effort should be made to have the larger stones which form this mass appear as having fallen off the rocks above.

The so-called dripping wall is not correctly a wall, but rather a precipitous effect three or more feet in height, replete with projecting ledges, crannies and niches constantly supplied with moisture. Such an effect is cooling and refreshing to observe and its addition to the rock garden will prove of great interest.

The object is to reproduce natural rock bluffs and hillsides, where the crevices receive a constant supply of moisture through seepage. In such crevices and upon protruding rock ledges are commonly found an abundance of plants worthy of cultivation.

This type of construction should not be confused with that of garden walls. In short, its appearance should be that of a cliff. Occasionally a step-like formation of ledges may be introduced or perhaps an area that is nearly vertical. Pockets and shelves in which plants can anchor their roots should be amply supplied.

Piping System.

Moisture is introduced in the following manner. The base layer of stone is set, and upon this, approximately halfway between the face and back of the stone, is laid a 1/4-inch perforated galvanized iron pipe. This pipe extends the length of the formation. The process is then repeated—placing first a layer of stone and then pipe in succession until the desired height is reached. Caps are placed on the pipes at one end of the formation; the opposite ends are fitted with valves, so that each section of pipe can be individually controlled. The pipes are then connected with a water supply.

Crevices and crannies are then furnished with suitable soils, the character of which is dependent upon the affinity of the species that is to occupy the pocket. Part of the wall should be in full shade, part in half shade and part exposed to the full rays of the sun.

Many of the choicer ferns are practically unknown to gardeners, partly through lack of a proper place to plant them. Of those ferns which grow on

rocks and require moisture constantly, most can be grown on the so-called dripping wall.

Ferns Suitable for Walls.

A few of the most desirable ferns, which are not difficult if an arrangement similar to the foregoing is produced, are listed below:

Cryptogramma Stelleri—Rock brake. Attractive but difficult to grow, as it needs an especially cool moist situation.

Pellaea atropurpurea—Cliff brake. Desirable for dry and even sunny situations.

Pellaea glabella—Smooth cliff brake. Requires a place as dry as, but cooler and shadier than the preceding form.

Asplenium ruta-muraria—American wall rue. Good on cool shady limestone ledges.

Asplenium Trichomanes—Rock maidenhair. Fine on shaded, moist rock.

Asplenium platyneuron—Ebony fern. Thrives in almost any well drained situation.

Camptosorus rhizophyllus—Walking fern. Worth growing in any cool shady place.

Phyllitis scolopendrium—Hart's-tongue fern. Should not be attempted unless an extremely cool location is available.

Woodsia obtusa—Cliff fern. Adaptable to almost any rocky situation.

Woodsia glabella—Smooth cliff fern. A tiny plant requiring a cool place.

Cystopteris fragilis—Mackay—Rock brittle fern. Good on shaded rocks.

Cystopteris bulbifera—Bulblet fern. Attractive on shady limestone; spreads rapidly.

Polypodium virginianum—Rockcap fern. Desirable as a capping for any rock.

Woodsia ilvensis—Rusty cliff fern. Attractive on dry rocks of moderate acidity.

Cheilanthes lanosa—Hairy lip fern. Desirable for ledges in partial shade.

Asplenium montanum—Mountain spleenwort. Attractive, but requires a cool moist spot where the acidity is high.

Asplenium pinnatifidum—Lobed spleenwort. Resembles walking fern, but is like preceding type in requirements.

To Make Moraine.

The dripping wall, when furnished with a talus-like effect at its base, as described in the notes on level areas of stone, may be easily converted into a wet moraine. A trench is made along the base of the dripping wall, which is also the highest level of the talus effect on a sloping area. The sides of the trench are then flanked with rock, to prevent the chips from filling in the trench. This trench will receive the surplus water from the dripping wall, and from there the water will proceed under the talus. It may be necessary, should the ground under the talus be particularly well drained, to use concrete or puddled clay on both sides and the bottom of the area occupied by the talus or moraine.

The fifth and final of a series of articles on rock garden planning and construction to be featured in The American Nurseryman appears on this page. The writer has expressed ideas that have been tested in actual practice in the middle west, and his remarks were concerned chiefly with those points that seemed to him to be of major importance in the work and on which the less experienced garden maker would wish to be informed. Topics previously covered included plans, stone handling, construction, paths and steps.

A. A. N. Convention Plans

Cincinnati Nurserymen Prepare for July Event

It's time to plan for attendance at the convention of the American Association of Nurserymen, to be held at the Hotel Netherland Plaza, Cincinnati, O., July 16 to 18. This is to be the sixtieth anniversary convention, and the midwest hopes to receive a record number of visitors through the portals of the great Cincinnati Union Terminal station, pictured on this page.

Cincinnati nurserymen are busy with preparations and some of their plans are divulged by T. B. Medlyn, chairman of the publicity committee.

The local committee, under the direction of President Lester C. Lovett, and the advisory committee, consisting of W. W. Hillenmeyer, Ollie Hobbs and Clarence Siebenthaler, have been making rapid strides toward the completion of their program. A tentative program has been sent to President Lovett for his approval by Herman Brummé, chairman of the local committee, and will appear in these columns in the near future.

One of the features of the program will be the dedication of the large ginkgo tree in full leaf to the Hon. Nicholas Longworth and Irwin Krohn, president of the Cincinnati park board.

William A. Natorp, chairman of the house committee, with the assistance of E. A. Smith, who is chairman of the exhibit space committee, has arranged this space in such a manner that everyone attending the convention must pass through the trade exhibits. For information on space, write to the W. A. Natorp Co., 4400 Reading road, Cincinnati, O.

Everything possible is being done to make those attending the convention feel at home. Right inside the Hotel Netherland Plaza will be constructed the familiar packing shed. More will be told about this later.

The Ohio Nurserymen's Association is planning to hold a joint meeting with the national convention. Wilbur Siebenthaler, president, will preside. Details of this program will appear later.

The Hotel Netherland Plaza reports it has already received fifty reservations for the convention, so get yours in early.

The convention is being well adver-



Sticker Invites Attendance.

tised in nurserymen's correspondence by stickers like that reproduced here. If you want a supply for use on your stationery, apply to the secretary of the local arrangements committee, E. A. Smith, Beechmont avenue, Mount Washington, Cincinnati, O.

WOMEN DISCUSS PLANS.

The Woman's Organization of Allied Florists and Nurserymen of Cincinnati met at the Hotel Gibson, Cincinnati, O., May 16. Mrs. Gus Adrian was in charge of the program, with Mrs. R. J. Rhein, Miss Edna Smith, Mrs. William Schuman, Mrs. Edward Schuman and Mrs. T. J. O'Connor assisting.

Mrs. Herman Brummé, chairman of the entertainment committee for the women visiting the nurserymen's convention to be held in July, has appointed her various committee chairmen, who met with her preceding the program to discuss further plans.

For planting at Colburn park, Newark, N. Y., the Jackson & Perkins Co., Newark, has offered the city a gift of 50,000 trees.

AMERICAN NURSERYMAN

CEMETERY OWNERS' MEETING.

The annual convention of the American Cemetery Owners' Association will be held at the Hotel Statler, Detroit, Mich., July 28 to August 1. Included on the program are addresses by some of the foremost cemetery officials in the country, such as Hubert Eaton, of Forest Lawn Memorial park, Los Angeles, Cal., and C. S. Harley, Seattle, Wash.

The opening event will be a breakfast Sunday morning, July 28, at which the speakers, officials and other members can become acquainted before the convention proper. It is anticipated there will be trade displays by about 100 exhibitors, covering all lines used in cemetery operation and maintenance. The secretary of the association, Roy Hatten, Ann Arbor, Mich., has asked members to take with them to the convention for display specimens of their advertising matter and forms relating to all aspects of cemetery work. Specialists in various fields will be on hand to confer with members outside of regular meeting hours.

There will be ample opportunity to visit the many fine cemeteries and memorial parks at Detroit, and facilities will be provided for demonstrating all kinds of cemetery equipment. Besides special entertainment for the ladies, visits to the Ford factory and Belle Isle are being planned for all.

CALENDAR OF EVENTS FOR NURSERYMEN.

May 16 to 18, American Rock Garden Society, annual meeting and exhibition, Fleischmann park, Cincinnati, O.

June 4 to 6, Pacific Coast Association of Nurserymen, annual convention, Salem, Ore.

June 6 to 8, Portland rose festival, Portland, Ore.

June 19 and 20, Southwestern Association of Nurserymen, annual convention, Mineral Wells, Tex.

June 20 and 21, American Peony Society, annual exhibition and meeting, Boston, Mass.

July 16 to 18, American Association of Nurserymen, annual convention, Cincinnati, O.



Cincinnati Union Terminal Station Spreads Inviting Portals to Nurserymen's Convention.

Shrubs and Trees Now in Flower

Woody Plants That Came into Bloom Early in May
in Central Ohio Are Described by L. C. Chadwick

A great many plants produced flowers at the Ohio State University, at Columbus, during the last ten days of April. This period provided a greater show of colorful flowers than any other 10-day period this year. In some cases the current flowering plants are not so conspicuous in flower as those blooming earlier. This is partly due to the fact that the foliage is now well developed on many of the plants and hides the flowers to some extent. On others, however, the developing foliage accompanying the flowers produces a decidedly pleasing effect, as the various shades of green provide a good background for the more highly colored flowers.

Among the most outstanding of the plants in flower during this period, and the ones I should like to discuss with some detail, are *Caragana arborescens*, *Daphne Cneorum*, *Elaeagnus longipes*, *Exochorda grandiflora*, *Fothergilla major*, *Halesia tetraptera*, *Neviusia alabamensis*, *Rhodotypos kerrioides*, *Viburnum Burkwrightii* and *Viburnum Carlesii*. Others which are blooming during this period are *Berberis Thunbergii*, *Lonicera tatarica*, *Malus Arnoldiana*, *Malus spectabilis*, *Prunus glandulosa*, *Prunus Persica*, flowering varieties; *Prunus triloba*, *Ribes alpinum*, *Syringa chinensis*, *Syringa oblata* and *Syringa vulgaris*. *Berberis Thunbergii*, the Japanese barberry, has a rather inconspicuous yellow flower and the plant is so common it needs no further discussion. *Lonicera tatarica*, the Tatarian honeysuckle, produced its first flowers the last day of the month. Since the other honeysuckles will follow in bloom shortly, this species will be discussed at a later time. *Malus Arnoldiana*, the Arnold crab, and *Malus spectabilis*, the Chinese flowering crab, have produced an abundance of flowers this season. A discussion of the flowering crabs will be given at a later time.

Prunus.

Common among the spring-flowering shrubs and small trees are the various species and varieties of *Prunus*. Although many of them make satisfactory plants which can be used rather extensively in border plantings, they will be mentioned only briefly. *Prunus glandulosa*, the flowering almond, and its varieties produce rosy pink and white double flowers. These small plants, which may be used for facing others in the border, are rather susceptible to borers and blight. A better plant under usual circumstances is the flowering plum, *Prunus triloba*, and its double-flowering variety. It has good flowers and forms a much more symmetrical plant that is less apt to sucker. It may well be used as a specimen or border plant. The horticultural varieties of peach, especially the double red and double white forms, are becoming more and more prominent in landscape plantings. The double red variety, *Amygdalus Persica rubro-plena*, is one of our most striking small trees in flower. The flowers are so brilliant that they attract attention for considerable distances. It is best used as a single specimen or combined with predominate numbers of white-flowering varieties of the cherries or crabs.

Ribes alpinum, the mountain currant, is an excellent plant for landscape purposes, combining good form and good foliage, and being suitable under a wide range of soil and environmental conditions. The lilacs are just starting to bloom, but will be discussed in a later article.

Caragana Arborescens.

The Siberian pea-tree, *Caragana arborescens*, is worthy of more extensive use. Its narrow upright habit of growth commends itself to many places. It may be used as a specimen if given rather severe pruning to develop new growth adequately clothed with foliage. The small leaflets, yellow pea-shaped flowers and greenish twigs make it useful as an accent point in the border. It lends itself readily to hedge planting and is comparatively free from pests. Propagation may be by softwood stem cuttings, root cuttings or seeds. Two other species of *Caragana* are worth using. *Caragana microphylla*, littleleaf pea-shrub, reaches a height of about ten feet, half the size of *C. arborescens*, and is somewhat more spreading. It can be distinguished from *C. arborescens* by the fact that it has from twelve to eighteen leaflets that are grayish green in color. *C. arborescens* has eight to twelve bright green leaflets. Even smaller in size is the species listed as *Caragana Maximowicziana*. Not exceeding five feet in height, it has four to six leaflets bright green in color and somewhat larger flowers. The variation in the size of these plants lends greatly to their use.

Elaeagnus Longipes.

Less showy in flower than many of the other shrubs, the cherry *Elaeagnus*, *E. longipes*, is nevertheless attractive and worthy of use. The plant finally attains a height of about ten feet and is composed of reddish brown stems, somewhat scaly, and leaves that are silvery and brown-scaly beneath. The small yellowish flowers are followed by fairly large, red, scaly fruits. Adapting itself to a wide range of soils, it retains its good form for a number of years without any attention. It should make a good plant for roadside planting, as it is drought-resistant and requires little pruning. Propagation may be by softwood cuttings, although seeds are normally preferred.

Daphne Cneorum.

Daphne Cneorum, a low-growing broad-leaved evergreen, with its fragrant rosy pink flowers in spring and fall, is so well known that it hardly needs comment. At least two forms appear in the nurseries, one of which produces little or no bloom in the fall and seems to be generally more unsatisfactory than the other type. Good blooming plants should be selected for propagation purposes. Propagation may be effected by taking softwood cuttings from normal or forced plants almost any time during the year. Layering may also be practiced. Considerable controversy exists regarding the best soil for daphnes. There is some indication that they will do well in peaty soil kept fairly moist but

well drained. Tests at Ohio State University have shown that they will do equally well in slightly acid to slightly alkaline soil (pH 6.0 to 8.0). All who have grown daphnes have experienced some difficulty in maintaining vigorous plants. It is not uncommon to find individual branches dying out entirely. The exact cause of this is uncertain. It may be due to winter sun injury. Stems injured by a hoe or other tool heal slowly and seldom fully recover. It has been suggested that *Daphne Cneorum* be grafted onto stems of *D. Laureola*, a more vigorous grower, to give it a better root system. The rose daphne makes an excellent plant for the rock garden, for planting above rock walls and as a low specimen in the foundation planting or border.

Exochorda Grandiflora.

Striking in flower, *Exochorda grandiflora*, the common pearlbush, is somewhat unsatisfactory at other times. The white flowers, borne in terminal clusters, are beautiful, but do not last long unless weather conditions are particularly favorable. Growing to a height of fifteen feet or more, the shrub usually becomes open and loose with age and needs other plants to face it. Instead of allowing it to develop into its natural upright tree form, it may be best to prune it severely and in such a way that it becomes a spreading bushy shrub. The dull green leaves are borne sparsely, and the fruits are retained and often unsightly. Slightly acid sandy loam soil appears to be best for good development. Propagation is somewhat difficult, seeds being the best means of reproduction. Specimen plants should be moved with a ball of soil.

The Wilson pearlbush, *Exochorda Giraldii Wilsonii*, should prove to be a better plant. The flowers are larger, produced more abundantly, and reddish, at least in bud. This variety grows upright and is more vigorous than the common pearlbush. The foliage is also more attractive.

Fothergilla Major.

Somewhat rare in cultivation, the *Fothergilla*s always attract attention when they are in flower. The flowers are white, produced in heads and borne near the ends of the branches, which reach to a height of eight feet or over. Of slow growth and resembling the witchhazels, this plant is attractive throughout the year. It should find use as a specimen or for planting in borders. It prefers a peaty acid soil that retains ample quantities of moisture. Propagation may be by seed or suckers. The orange yellow fall foliage is striking.

Halesia Tetraptera.

A conspicuous large shrub or small tree is the giant silverbell, *Halesia tetraptera*, when it bursts into bloom in the spring with its white drooping bell-shaped flowers. Often reaching thirty feet in height, it may be retained to half that size and made a compact symmetrical bush by pruning. An identification characteristic which may be used with the *Halesias* is the diaphragmed pith. The pith is solid with partitions at regular

intervals. The silverbell does best in moist soil and fairly cool situations. It may be used as a lawn specimen or combined with the flowering dogwoods or redbuds in mass planting. Propagation may be by seed or layers.

Neviusia Alabamensis.

Neviusia alabamensis, snow-wreath, an uncommon shrub, has much to commend its use in landscape plantings. It has good flowers, foliage and habit of growth, three factors which denote a good shrub. It is a small plant, seldom reaching over four feet in height, with arching branches bearing feathery white flowers along a greater part of their length. The foliage resembles that of *kerria* to some extent, although somewhat broader and longer. The leaves are normally toothed, but may be slightly lobed on the more vigorous shoots. The plant is doing well in the gardens at Ohio State University. It probably is best in light, well drained soil and seems to tolerate considerable shade. It may be used for facing taller shrubs in the border or foundation planting or as a small specimen. Propagation may be by softwood cuttings.

Rhodotypos Kerrioides.

The jetbead, *Rhodotypos kerrioides*, is one of our more common shrubs, but certainly not overplanted. Possessing good habit of growth, attractive foliage, striking white flowers throughout May and June and four black nutlets clustered together at the ends of the stems and persisting nearly the whole year, this plant has extensive possibilities in landscape work. The foliage color is lighter green than that of many of our shrubs, thus fitting in well as a contrast. In addition to all of these good characteristics, it tolerates a wide range of soil and moisture conditions and may be used in either sun or shade. *Rhodotypos* ordinarily reaches a height of four to five feet, but may become six feet or more in especially favorable conditions. It may be used as a specimen or as a border and foundation shrub. Propagation may be by seed or cuttings.

Viburnum Burkwoodii.

The new evergreen viburnum, *Burkwoodii*, has been mentioned in previous articles as one of the more promising broadleaved evergreens. This spring is the first opportunity I have had to observe it in flower in Columbus, and I am happy to state that it seems to live up to all the good things that have been said about it. The flowers are pinkish white, fragrant and similar to those of *Viburnum Carlesii*. Both plants produced their first blooms on April 24 and continued to be attractive for about ten days in spite of the unfavorable weather. I am convinced that *Viburnum Burkwoodii* will become an outstanding favorite as soon as it is better known.

Viburnum Carlesii.

So much has been said about *V. Carlesii*, the fragrant viburnum, in past articles that further comment is not necessary here, except the statement to the effect that it still continues to be a favorite shrub because of its early fragrant flowers, silky foliage and good habit of growth. It may be said in closing that landscape men now have at least three fragrant viburnums that should find extensive use, *Burkwoodii*, *Carlesii* and *fragrans*.

Neighborhood Nursery

Builds Sales of Hardy Plants

What will do more for the hardy plant business than anything else in America is the medium and small nurseries scattered thickly all over our greatly diversified country. Some plants that do well in the Pacific northwest have a hard time in the middle west. Plants from our eastern seaboard may or may not thrive in the south, the southwest or midwest. And in the Rocky mountain regions certain species reach an attainment that can never be reached farther east—dahlias, for instance. The dahlia is a native of the mountains of Mexico, and no wonder it thrives in the same range farther north! A friend from Colorado says, "They grow such wonderful dahlias back home."

But it is a perennial that loves to choose its own location for a home. The explanation is that it has to endure more than one season. An annual will probably grow well over a much larger territory than a perennial for that one reason.

Hardiness Relative.

The better class of gardeners in America wants perennials. No matter if we do have a temperature 20 degrees below zero, as we do some winters, and all our hardy plants show a great mortality by spring, the home gardeners will cheerfully stock up again and again. Whether they are clumps of hardy ornamental grasses, handsome shrubs, choice evergreens or just herbaceous perennials, the gardeners want hardy plants. The term "hardy" is relative. What is hardy in one section may prove otherwise in another. Not always does hardiness mean immunity to intense cold; sometimes it means an ability to endure severe drought, extreme heat or alternate freezing and thawing. And we have every sort of climate in these United States from subtropical to one not unlike Siberia and the mountain region of eastern China. Yes, that is the native habitat of our glorious peonies, and that is why they thrive so well in the extreme northwest.

And there should be a hardy plant, shrub and evergreen nursery in every locality of this country. In a more thinly settled portion, the small nursery may be run in conjunction with the greenhouse business, but in a thickly settled section a nursery is a big enough job for one man or his entire family.

Immediate Results.

There is a big reason for this. The average American gardener does not like gambling in plants so well that he will take a chance. He wants results this year. When he sees a beautiful flower, a perennial usually, he wants that flower on his own premises next year. Flowers, trees and shrubs help to make homes happy. Well planted premises keep the lord and master, to say nothing of his lady, contented and entertained right on their own premises. In these past times of hardship, how many homes in jeopardy of being lost through mortgages have been the cause of extreme yet willing self-denial on the part of the owners! Americans are a nation of individualists, and a beautifully planted

home adds its weight in keeping us so. The nurseryman who grows plants that will give home owners satisfaction is doing his part toward making us 100 per cent home lovers and home owners.

The idea I am trying to convey is that every section of the country is so different from every other section that for a customer to get a good idea of what may do well on his grounds he must visit a nursery as near to his own home as possible which grows the plant he is interested in. That is the one safe and sure method of choosing a plant, provided its likes and dislikes as to shade and moisture are catered to. That is why we should have more and more small nurseries growing a diversified list of plants suitable for local trade.

Personal Selection.

The customer likes to drive up in his car, select a plant that the nurseryman has found to be successful, take it home and plant it within an hour or two after it has been lifted from the soil. That method is popular in my section. Now, I do not mean to say that the larger mail-order houses are not patronized, also, for they are, but mostly by the enthusiast. The average home owner is the fellow I am talking about right now. He dislikes going to too much trouble. He makes a pleasure trip of his drive late in the afternoon to the local nursery, taking home plants for his garden. Probably the nurseryman has a shipment of something new for trying out. This is watched interestedly, and if it is successful, it will be purchased at another visit.

I have visited such a nursery, that of W. J. Engle & Son, Dayton, O. It is neither too large nor too small, which has done a good business throughout the hard times. All plants are sold at retail at reasonable prices, and such a collection! It contains every plant mentioned in the alphabetical list of perennials. The head of the firm personally knows the habits, likes and dislikes of every plant on his list, for he loves his work. While he grows a long list of perennials, his especial love seems to be rockery and alpine plants suitable for what he calls "the corn belt" of the United States. By "corn belt" he means also that section of the midwest with limestone rock just below the subsoil. This limestone section is the most trying in the whole United States, he says. Acid-loving plants require a treated soil, and he deems it almost a waste of time to treat a limestone section with acid material, because if artificial watering is practiced, that water naturally comes through limestone rock and will counteract any acid fertilizer or material added to the soil in the course of a few months. The only logical thing to do is to try out the various plants offered through the trade. Whatever does well is retained. Such plants as require too much coddling are discarded. That reduces the list materially, but he believes it will prove wise in the long run, because customers are not disappointed in the stock they buy. And a satisfied customer will come back again and again.

That is the secret of success of the

neighborhood nursery run by a man who personally studies and supervises every plant on his premises. As I said before, this sort of job is well adapted for the small greenhouse owner in any portion of the United States. He can make a study of his particular soil, climate and customers and build up a lasting business, through good times or bad.

There is one more advantage possessed by the owner of a small or medium-size nursery. Such a plantsman is sure to make a greater success of one plant or maybe two or three than of all the rest. While not discarding any, he propagates his specialty in quantity—yes, large quantity. And what then? Why, of course, that one specialty can be advertised to amateurs in the gardening publications and to the trade through the columns of trade papers. That brings in more income day by day all through the year. The nursery I visited has such a specialty, and guess what it is? Why, nothing but sempervivums, our old-fashioned hen-and-chickens, but gloriously improved varieties, both as to beauty and size. You would never call one of the newer sempervivums a hen-and-chicken again if you could have seen them as I did—a large silvery-tinted variety similar to the tender echeveria; the famous atroviolacea, of a decided purplish red color, and the largest of all, Emerald Giant, an enormous rich green. The large rosettes reminded me of green, purplish and silvery water lilies, if you can imagine such. Instead of the plants' being common, they are plant treasures, something to prize and cherish.

Sempervivums.

W. J. Engle said the sempervivums with two exceptions delight in a limestone soil and will endure neglect, but will repay care. He said they will endure full sun, but larger and finer rosettes will grow when the plants are in partial shade or, better still, where they will have only the eastern sun, say, on the east side of a hardy border or house. Sempervivums are beautiful amid rocks and, with reasonable attention, will last year after year. And as for winter color, the evergreen has nothing on the sempervivum. No, indeed! The sempervivum has its richest color during the winter season. The color begins to change as sap begins to flow in spring and continues until midsummer, when the richness of color is at its lowest ebb. If for no other reason, the sempervivum should be given especial attention by all gardeners for its winter beauty. As the weather begins to turn cool in the fall, the sempervivum begins to take on its color characteristics.

All of us have seen old tubs, pails and kegs planted to hen-and-chickens. The plants do well this way, but I think they deserve something more ornamental in which to grow than a discarded tub or keg. Pottery men might make us something like strawberry jars; then, we could appreciate this valuable plant in a better setting. Some time ago I saw a fine one belonging to an elderly woman living in an old tenement house. She had no garden except a square yard of space beside her doorstep. On this space she had two or three handsome house plants, with an old pail almost covered on top and sides with sempervivums. She said she planted them about three years ago and kept them on the kitchen porch

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during winter. Even if the plants were in an old bucket, the arrangement was attractive to the passer-by, with the luxuriant green rosettes standing up large and full, a few of them in bloom.

The sempervivum, I am firmly convinced, is a choice nursery product for the grower of perennials who specializes in hardy plants. We have many tender succulents from California which are beautiful for the greenhouse, but the sempervivum is improving so rapidly that if improvement continues, the glaucous echeverias will have to look to their laurels.

R. W. W.

CATALOGUES RECEIVED.

[In writing for a copy of any of the catalogues reviewed below, please mention that you saw it described in The American Nurseryman.]

Shenandoah Nurseries, Shenandoah, Ia.—Bulletin No. 5, with grade counts, covering fruit, ornamental and shade trees, shrubs, perennials, roses and nurserymen's supplies.

Willis Nursery Co., Ottawa, Kan.—April bulletin, representing largely stock in storage. Shrubs, trees, vines, perennials, bulbs and small fruits are offered. Specialties are the new evergreen barberry, seeds of Lillium philippinense formosanum and Glendale gooseberries.

Linville Nurseries, Linville, N. C.—Trade list of azaleas, kalmias, rhododendrons, hemlocks and other hardy native plants, issued by L. A. and F. J. A. Berckmans. Cultural notes for the plants are valuable.

Otto Katzenstein & Co., Atlanta, Ga.—Special trade bulletin, offering remainders of the 1934 crop at special prices, also spring-ripening seeds, such as Ulmus pumila, Acer rubrum, Betula nigra and others.

Kelsey Nurseries, St. Joseph, Mo.—Bulletin No. 2, listing wholesale offers of general nursery stock. Represented are ornamental trees, including flowering crab and cherries; fruits and small fruits; forest tree seedlings; shrubs, hedging, roses in large variety, perennials and spring bulbs.

Koster & Co., Bridgeton, N. J.—Wholesale spring list of nursery stock, notable for specialties such as the Japanese maples, new hybrid rhododendrons and older varieties, azaleas in variety, selected evergreens and many grafted French hybrid lilacs. A note states the prices quoted are "actual selling prices, not fancy catalogue prices."

Palisades Nurseries, Sparkhill, N. Y.—Retail price list, subject to a forty per cent trade discount, describing herbs, rock garden plants, perennials, vines and roses. Noted among the rockery items are aubrietia, Dieffenbachia, named helianthemums and Dianthus neglectus. The stock is described as transplanted and nursery-grown for more than one year.

Mount Arbor Nurseries, Shenandoah, Ia.—May bulletin, listing general nursery stock, including items that are dormant and in ice-cooled storage and evergreens in the field. An illustration shows specimens of the 3-inch potted clematises, with 24-inch tops, offered by the firm and packed in special containers. Also featured is a new bulb display case for gladioli or cannas.

Sunnybrook Farms Nursery, Chesterland, O.—General announcement of services and stock featured at this establishment. Annuals are grown in about 150 varieties, it is stated. Other types of material are shrubs for the rock garden, dwarf evergreens and new perennials. A landscape service is maintained, and a horticulturist is in charge to give lectures, arrange demonstrations and show plant material. Mrs. Harold O. Ruh is owner of the nursery, with Gabriel Simon, horticulturist.

Herbaceous Perennials

C. W. Wood Comments on Less Common Varieties of Hardy Plants Deserving Attention

OUTSTANDING NEW SUBJECTS.

Deserve Attention.

American horticulture has reached the point in its evolution where the nurseryman who expects to keep near the head of the procession, or even stay in the forward-marching column, must offer his customers the new plants as they become available. This does not mean, of course, that the old favorites will be neglected, nor that one should plunge into every new thing that is offered. But a study of present trends will show the necessity of being able to offer one's customers some of the outstanding new materials. It is the purpose of these notes to point out a few of the latter.

Phlox paniculata Columbia.

If subsequent behavior of Phlox paniculata Columbia lives up to present indications, it is the beginning of that long-sought-for treasure—a strain of Phlox paniculata that is resistant to mildew, black spot and other diseases to which our common garden phloxes are subject. Coupled with its disease-resistance, Columbia possesses a delicate pink flower with a faint blue center, a lovely combination, whose colors do not fade and whose substance is strong enough to stand up under adverse conditions. The plant is strong and vigorous, making a bushy growth two feet or more in height, with as many as a dozen heads of flowers on a well done 2-year-old plant.

Phlox subulata Camla.

While on the subject of phloxes, it may be well to call attention to Phlox subulata Camla, a long-blooming variety of P. subulata. I have never seen the plant and so can say nothing about it from experience, but friends in England told me a few years ago, when it first came out, that it was the greatest advance that had yet been made in the species, and one United States grower who lists it this year is just as enthusiastic. It is said to be a vigorous grower, free with its salmon-pink flowers, blooming over the unheard-of period, in the case of P. subulata, from May to September, and is a rapid propagator. When one considers that the varieties now on the market are among the most popular rock garden plants, it is easy to see a bright future for this one.

Liatis scariosa Alba.

Liatis scariosa alba is not a new plant, though it has never been plentiful and still remains practically unknown to most gardeners, both amateur and professional. The type plant, which grows from two to four feet high and flowers from August onward, is a desirable plant, and, next to L. pycnostachya, the most useful of the genus. But in the white-flowered form of L. scariosa we have a really outstanding plant. It is useful alike in the border, where its ability to stand dry weather and its spire-like growth give it a broad field, and as a cut flow-

er, because of its pure white color, long-lasting quality and pleasing inflorescence.

Pentstemon Crandallii.

The great interest among eastern gardeners for pentstemons calls for careful selection of kinds offered by nurserymen if there are not to be many replacements and much dissatisfaction. Every grower who has handled western pentstemons knows that few of them can be counted upon to last more than a year or two under conditions in the middle west and east, and that is especially true of the alpine forms. We are lucky, then, when we find one with the constitution and beauty of Pentstemon Crandallii. This species comes from an isolated range in Colorado and has proved hardy with me through a temperature of 40 degrees below zero. Not only is it hardy, but it is a vigorous grower, making broad mats of narrow foliage, not over an inch or two high, through which shine an incredible number of lilac blue flowers in late May and June. A 5-year-old plant in my garden has spread into a carpet three feet across and becomes more beautiful every year. Like others of its class, it must have perfect drainage and sun. It is a true dry-weather plant, clumps in the field being more beautiful after the prolonged drought of 1934 than they were during the wet spring. This plant is easily propagated from cuttings or divisions.

Aster Hybridus Luteus.

The plant that has appeared in a few lists recently as Aster hybridus luteus seems not to have attracted nurserymen's attention so rapidly as its merits warrant. I have had it under observation about four years and like it more and more every season. Its behavior here indicates that it has all the good qualities, such as hardiness, vigor, absence of disease and insect enemies and floriferousness, with blooms of pleasing color and long-lasting when cut, which the perfect plant is supposed to possess. A brief description of the plant could be stated as follows: Clusters of small, bright yellow flowers on 18-inch to 2-foot stems from July until September. But that would give little idea of the beauty or usefulness of the plant. It is easy to grow in any

AMERICAN NURSERYMAN

sunny, well drained spot and grows readily from cuttings.

The New Dwarf Asters.

Also in the aster class, the new dwarf forms which are available in a few nurseries this spring deserve attention. These new forms are something we have been looking forward to for years, and they are sure to become instantly popular. They seldom grow over one foot high, making compact bushes that are a mass of color during September. Descriptions of a half-dozen or more will be found in a number of catalogues, so need not be repeated here. These asters, too, are easily propagated from cuttings.

Hemerocallis.

Everything points to a brilliant future for the new hemerocallis hybrids, and the up-to-date nurseryman will want to get his share of the business. Forms now available cover a wide range of colors, from near-white through all shades of yellow and orange to red, and the blooming period can now be extended to cover practically the entire summer.

Heleniums.

Much progress is also being made in heleniums—progress which you as a grower of plants should watch and take advantage of. There is no more important hardy border plant and few plants are more valuable for cutting. The following will find ready sale when

Home-Grown Chinese Elm Seed

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they become known: Crimson Beauty, bronze crimson; Golden Youth, golden yellow; Moerheimi Beauty, reddish bronze.

Kniphofia Mount Etna.

Kniphofia Mount Etna is the best new torch lily that I have seen in years, making a vigorous growth and producing its rich red flowers from July until frost. The coming of this variety, along with kinds like Pfitzeri, Royal Standard, Gold Tower, etc., has added impetus to the culture of torch lilies.

Anemone Japonica September Charm.

Japanese anemones are among the autumn garden's choicest furnishings, but we of the north have been denied their fullest use because so many meet disaster from early frosts. In the variety September Charm we have one that blooms early enough (early September) to escape that danger. In addition, its 2-inch flowers of silvery rose are a real addition to the range of colors in this popular subject. It is a free grower, getting about two feet high.

Papaver Orientale Mandarin.

It is truly astonishing to watch the progress that is being made in oriental poppies, a fact that is brought to mind afresh when one considers the new variety Mandarin. If size of flower adds anything to the value of a poppy, this one, with cup-shaped flowers as much as ten inches across in well developed specimens, should be placed near the top. Its Chinese red color is a pleasing shade and is said to show none of the disfiguring black basal spots in established plants.

Papaver Nudicaule Gartref Strain.

Iceland poppies are always popular, a condition which should be enhanced by the advent of the Gartref strain, with its large flowers in delicate colors (art shades, according to connoisseurs), edged with a contrasting color. No poppy is easy to move when it is in a vegetative state and that is when they are most in demand. This indicates pot culture for the part of the crop that is meant for late spring and summer sales. This new strain can be grown from seeds and turned into cash within a few months of sowing. C. W. W.

EXEMPT FROM SALES TAX.

A special ruling of the tax commission in the state of Ohio resulting from the passage of a bill in the Ohio legislature to exempt from sales taxes those commodities used in the manufacture or processing of merchandise has been publicized by the Ohio Flower Growers' and Retailers' Association, which sponsored the legislation. This act will save some \$5,000 a year to growers in Ohio for the tax on fuel alone.

The special ruling regarding sales to farmers and horticulturists is as follows:

"Farmers and horticulturists are considered to be manufacturers or processors in the interpretation of the sales tax act and, therefore, sales of articles of tangible personal property to farmers and horticulturists, who purchase such items for the purpose of incorporating them as a material, or a part,

into tangible personal property, are not subject to the tax imposed by section No. 5546-2 of the General Code.

"Sales of articles of tangible personal property to be used or consumed by farmers or horticulturists directly in producing tangible personal property are not subject to the tax imposed by said section.

"The taxability or nontaxability of sales is determined by the general use of the articles sold. For the sale to be exempt, it is necessary that the article sold be used directly in the production of tangible personal property, or in the stimulation of the growth of the products of the field.

"Articles used in producing or in stimulation of production must be distinguished from articles used in storing, distributing or selling products of the farm after such products have been harvested.

"Sales of materials to be used in the construction or repair of buildings, such as lumber, nails, glass and similar items, shall be subject to the tax.

"All implements and articles used in the cultivation of the soil, harvesting the products of the soil, or orchard, or to stimulate the growth of crops, are deemed to be used directly in the production of tangible personal property and the sales thereof to farmers or horticulturists will not be subject to the sales tax."

Among the articles sales of which to farmers or horticulturists are not subject to the sales tax are the following:

Articles used in cultivation, production and fertilization: Plows, shovels, weeders, fuel for heating greenhouses only, manure spreaders, tractors, culti-

vators, drain tile, rakes, spray equipment, and paint, repair parts, lubricating oils and grease for the above items.

Articles used in harvesting crops: Rib-bon, sacks and similar containers, bowls and jars, cellophane wrappers, twine and baskets.

However, sales of the following articles to farmers or horticulturists shall be subject to the tax: Building material and building maintenance, household equipment, office equipment, fencing, fence posts, lighting equipment and automobiles used on the public highways, and not solely for the purpose of making retail sales.

NORTH DAKOTA TAX RULES.

Instructions regarding the operation of a sales tax in the state of North Dakota as far as florists are concerned are of interest to the trade in other states which have sales taxes. The North Dakota rules are as follows:

"Florists are engaged in the business of selling tangible personal property at retail and are liable for payment of the sales tax measured by receipts from sales of flowers, wreaths, bouquets, potted plants and other such items of tangible personal property.

"Where a nurseryman or florist sells shrubbery, young trees and similar items, and as a part of the transaction transplants them in the land of the purchaser for a lump sum or flat rate, the entire receipts from the transaction are within the act. Labor charges for transportation are not deductible by the seller in computing the tax, unless they are separately contracted for and billed to the purchaser.

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Instructions in Planting

H. B. Tukey Suggests Advice Nurserymen May Give on Fruit Trees That Fail to Bear

In the article in the May 1 issue it was shown that pollination was an important factor in the setting of fruit and that solitary trees often fail to set fruit because proper pollen from some other variety was not transferred to the flowers. It was pointed out that to correct this condition it was necessary to have some other variety near by. The question now is, what varieties are best for this purpose and what are the needs of the various classes of fruits?

Among sweet cherries, a good rule to follow is that all varieties are self-sterile; that is, they will not set fruit with their own pollen. An isolated Black Tartarian cherry tree may blossom full, but it will not set fruit. The sour cherry will provide pollen which is satisfactory for the sweet cherry, but the blossoming of sour cherries occurs so much later than sweet cherries that in most seasons good sets of fruit do not result from this combination.

Certain varieties of sweet cherries, however, will not set fruit when pollinated with pollen from certain other varieties. An example of this so-called incompatibility is the relation between Bing, Lambert and Napoleon. These three varieties, which have been set in large blocks in certain sections of the country, will not set fruit either with their own pollen or with the pollen of either of the other two. If one should plant trees of Bing, Lambert and Napoleon close together and place a large cheesecloth frame over them, he would get no fruit. Likewise, Windsor and Abundance fail to set fruit when cross-pollinated. Aside from these few instances, however, most varieties of sweet cherries will work satisfactorily when planted together. Black Tartarian is commonly accepted as an exceptionally good pollinizer. Windsor, Yellow Spanish, Schmidt, Seneca, Coe and Governor Wood are also satisfactory pollinizers for one another.

As for the sour cherry, the varieties Montmorency and English Morella will set satisfactory crops with their own pollen. Accordingly, it is usually stated that sour cherries do not require cross pollination. Nevertheless, the Chase and Ostheim varieties do require cross pollination, and were they the principal commercial varieties, the printed regulations would be reversed for sour cherries.

Japanese plum varieties are like the sweet cherry in that they require cross pollination. Fortunately, there are few, if any incompatibilities between Japanese plum varieties, so that where two varieties have been sold together, the pollination problem does not exist. Fortunately, this happened in many instances where nurserymen commonly sold Burbank and Abundance as companion trees.

The European plums present a wide array of requirements. The Italian prune, Reine Claude, and Agen (French prune) will set crops with their own pollen. Nevertheless, the addition of another variety for pollination purposes is not undesirable. It will be noticed that these three varieties have attained com-

mercial importance. May it not be in part for the fact that they have been self-fruitful? Grand Duke, Yellow Egg, Stanley, Albion and a score of other varieties will not set fruit unless pollinated with another kind. So far as is now known, however, almost any two of the more common varieties will be satisfactory when planted together.

Problems in Apples.

Some varieties of apples are partially self-fruitful, such as the Baldwin, Rhode Island Greening and Rome Beauty. At the same time, these varieties are tremendously improved in fruiting if proper pollination is provided, and the majority of apples, such as the McIntosh, will set no fruit unless proper pollination is provided. Generally speaking, nearly any two varieties of apple will pollinate each other satisfactorily, yet there are a few exceptions to the rule. Notable among these are Baldwin, Rhode Island Greening, Tompkin's King and Gravenstein, which have poor pollen and which are unsatisfactory for use in pollinating other varieties. Delicious, Red Astrachan, Oldenburg, Golden Delicious, Ben Davis and Rome Beauty are especially good pollen producers and, therefore, especially valuable for pollination purposes.

One must also consider the blossoming period of apple varieties, which, unlike that of peaches, which blossom close together, shows considerable spread between varieties. Rome Beauty, Macoun and Northern Spy are recognized as late-blossoming varieties, and Oldenburg is considered an early-blossoming kind. One of the recommendations for Macoun is that it blossoms with North-

ern Spy, thus providing a pollinating variety which has been badly needed until now.

Pears offer much the same set of problems as do apples. A few varieties, such as Kieffer and Seckel, will set a few fruits with their own pollen, but the vast majority need cross pollination. Furthermore, almost any two varieties will work satisfactorily together, with a few exceptions. Among the exceptions are Seckel and Bartlett, which do not cross-fertilize each other satisfactorily. Gorham, one of the new Bartlett type varieties, is being recommended to interplant with Bartlett for pollination purposes. Beurre Bosc is also a fine pollinizer, as is Winter Nelis, even though it blossoms a trifle late. The Kieffer pear, of course, contains oriental blood, so that it really belongs to a different group than the more common varieties, such as Bartlett, Seckel and Clapp's Favorite. Nevertheless, Kieffer will fertilize these varieties satisfactorily and is in turn effectively fertilized by them.

Until quite recently, it was accepted that all peach and nectarine varieties were self-fruitful. It is only recently that it has been found that cross-pollination is necessary for some varieties. Now it is finally found that J. H. Hale, which has been reported as a shy bearer in solid blocks, has poor pollen and does not set satisfactory crops when self-pollinated. Another variety of similar habit is Mikado. For the present, then, these two, and there probably will be more discovered as time goes on, should not be planted in solid blocks without other varieties near by.

With this information at hand, the problem now is what to do when the original question is asked: "I have a single plum tree which blossoms full each year, but never sets fruit. What can I do about it?" Since the inquirer wants immediate help, and the conclusion is that faulty pollination is the problem, attention should be called to some practical method of providing cross-pollination at once. This can be

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done by securing a spray of blossoms of a compatible variety and, when the blossoms are fully opened, attaching the spray to a long pole and brushing it against the blossoms of the tree that needs pollinizing. Another method is to secure several bouquets of blossoms and set them in pails of water near the tree where visiting bees will effect the transfer of pollen.

Of course, as a permanent remedy, some other variety should be grafted into the tree, or trees of another variety should be planted near by.

Nurserymen can do great service if they will bear these facts in mind and pass them along to prospective purchasers. The catalogue might just as well point out the fact that it is necessary to plant more than one variety of most fruits in order to secure good fruiting. Surely it would be a service to point out the necessity for providing pollinizers for J. H. Hale and Mikado peaches, to point out that Seckel and Bartlett do not cross-fertilize each other satisfactorily and to indicate that most apples, pears, plums and sweet cherries need cross-pollination. Likewise, the nurseryman will find this information a valuable means of making contacts with prospective purchasers. And finally, in letters of inquiry this information can be passed along to help keep a satisfied customer and to help maintain a growing mutual interest. Attention to details of this kind is a helpful service to the fruit grower and gardener and is mutually helpful to the nursery industry and to the customer.

SEVEN NEW STRAWBERRIES.

Seven varieties of strawberries have been introduced by the United States Department of Agriculture in the past five years. These are adapted to different purposes and different regions. Of these seven, the Southland is strictly a southern home garden sort. Of the other six varieties, Bellmar has proved hardy under some conditions in Minnesota, Redheart is hardy in Maine and Oregon, Blakemore is hardy in Iowa, Narcissa is hardy in Oregon and Dorsett and Fairfax are hardy in parts of Wisconsin. Blakemore and Dorsett are also above average in drought-resistance, states George M. Darrow, senior pomologist of the bureau of plant industry, writing in the Minnesota Horticulturist.

If they prove hardy, then growers may find them of commercial value for the following characteristics:

Blakemore—A firm, bright red, tart shipping variety of the highest preserving quality.

Dorsett—A bright red, mild, market variety of the highest dessert quality.

Fairfax—A dark red, exceptionally firm, sweet, market variety of the highest dessert quality.

Narcissa—A deep red, local, market variety of very high dessert quality.

Redheart—A deep red, exceptionally firm, tart variety of the highest canning quality.

Bellmar—A handsome, large variety of good dessert quality.

Of these, Blakemore, Dorsett and Narcissa are so vigorous that they produce far too many plants under best growing conditions and mat so thickly that few berries are produced. To obtain the highest yields of the best berries of these varieties, a full stand of runner plants spaced nine or more inches apart in the bed should be obtained by the end of July and later runners kept off. This practice builds up large plants with large crowns. Such plants are best to withstand drought and winter cold.

Bellmar makes somewhat fewer and Fairfax much fewer runners under most

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ROSES			
Box Each	Variety	Grade Each	Wt. Code
1	960 American Pillar.....	1 1/2	5c 440 Anna
1	700 Chaplin's Pink Cl.1	1 1/2	12c 680 Arthur
1	480 Chaplin's Pink Cl.1	1 1/2	12c 480 Auburn
1	1200 Chaplin's Pink Cl.2	5c	430 Alma
1	520 Cl. Americana Beauty, red.....	xx	12c 730 Ada
1	480 Cl. Baby Rambler, everblooming.....	1	8c 500 Burk
1	2070 Cl. Baby Rambler.....	2	4c 500 Burnett
1	400 Crimson Rambler.....	xx	8c 500 Bates
1	700 Crimson Rambler.....	1	8c 450 Bell
1	600 Dr. Van Fleet, flesh.....	1 1/2	12c 520 Chestnut
3	480 Dr. Van Fleet.....	1 1/2	12c 470 Clifton
1	720 Dr. Van Fleet.....	1 1/2	8c 420 Congress
1	920 Dorothy Perkins, pink.....	1	8c 520 Camden
1	470 Gardenia, yellow.....	1 1/2	12c 420 Duke
1	800 Gardenia.....	1 1/2	8c 460 Davis
1	550 Glendale, yellow.....	1	12c 370 Doctor
1	200 Staechelin, Spanish Beauty.....	xx	12c 380 Daniel
1	700 Staechelin.....	1 1/2	12c 650 Diamond
2	700 Paul's Scarlet Cl.1	1 1/2	12c 650 Eden
2	800 Paul's Scarlet Cl.1 1/2	8c	450 Eugene
1	310 Persia Yellow, bush.....	1 1/2	12c 300 Foster
1	400 Primrose.....	1 1/2	12c 340 Fern
3	400 Red Explorer, red, everblooming.....	1	8c 485 Fulton
1	400 Silver Moon.....	1 1/2	12c 440 Frank
1	420 Scorchers, new red.....	1 1/2	12c 460 Gertrude
1	640 Scorchers.....	1 1/2	8c 430 Gibson
1	660 White Dor. Perkins.....	1	8c 380 Gates
1	85 Mme. Plantier.....	xx	8c
1	130 American Pillar.....	1	8c
1	20 Crimson Rambler.....	1	8c
1	160 Sir Thos. Lipton.....	1	8c 430 Haven
1	320 Harrison's Yellow.....	1 1/2	12c

ROSES—Continued			
Box Each	Variety	Grade Each	Wt. Code
1	170 Sir Thos. Lipton.....	1 1/2	8c 420 Hortense
1	580 Paul's Scarlet.....	1 1/2	8c
1	200 Scorchers.....	1 1/2	8c 440 Helen
1	380 Glendale.....	1 1/2	8c
1	180 Gardenia.....	1 1/2	8c
1	300 Primrose.....	1 1/2	8c
1	300 Dr. Van Fleet.....	1 1/2	8c
1	240 Jacotte.....	1 1/2	8c 300 James
1	1530 Marie Gouchault.....	2	4c
1	630 Excelsa.....	2	4c 450 Joyce
1	870 Gardenia.....	2	5c
1	300 Glendale.....	2	3c 445 Julius
1	510 Hansa.....	2	4c
1	360 Sir Thos. Lipton.....	2	4c
1	360 Belle Poltevine.....	2	4c
1	150 Sarah Van Fleet.....	2	5c 420 Louise
1	420 C. F. Meyer.....	2	5c
1	240 Amelie Gravercaux.....	2	5c
1	90 F. J. Grootendorst.....	2	5c
1	120 Harrison's Yellow.....	2	5c 290 Langdon
1	340 Edith Cavell, dark red Baby.....	1	12c 310 Martha
1	610 Griley, new red Baby Rambler.....	1	12c 390 Maurice
1	80 Triomphe Orleans.....	xx	12c
1	60 Chatillon.....	xx	12c
1	40 Chatillon.....	1	12c 240 Malden
2	13300 Multiflora, de-eyed understock liners for this summer budding; medium, \$12.50 per 1000.....		500 Norbert

SHRUBS

1	1080 Buddleia Farquhar, dwarf; 18 to 24 ins.....	5c	600 Samuel
1	1110 Buddleia Farquhar, 12 to 18 ins.....	4c	340 Sylvester

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conditions than Blakemore, Dorsett and Narcissa, but usually even their runners should be restricted for best results. Bellmar produces more runners than Fairfax, while Fairfax tends to produce larger, stronger plants than Bellmar. Redheart produces fewer runners and is so subject to the leaf scorch disease that it needs rich soil with ample moisture to succeed. So far, Redheart has been recommended only for western Oregon and Washington, where leaf scorch is not so serious as in the eastern states. Narcissa also has been recommended only for the Pacific northwest, where it is liked as a high-quality early variety. In eastern states it is extremely early and dark and is small unless the beds are kept thin, but it is exceptionally vigorous.

The Blakemore is now one of the six leading varieties of the United States. Although it has proved especially adapted to southern conditions, it is being grown commercially as far north as eastern Iowa. Generally, in the north, it is allowed to form such a dense mat of plants that it is not very productive and the berries are small. When the plants are well spaced in the row it is productive. Experiments in North Carolina have shown that spacing the plants nine inches apart is much more profitable than allowing a dense mat of plants to form. In fact, Blakemore, Dorsett and other varieties are adapted to many locations only if the beds are kept thin. Blakemore is a tart berry and not equal in dessert quality to Dorsett and Fairfax when eaten out-of-hand. However, it is superior to either Dorsett or Fairfax for preserving.

Dessert quality, large size, beauty of fruit and health of plants are the strong points of Dorsett and Fairfax. Dorsett tends to mat too densely and then is not very productive. It is not so firm as Fairfax or Blakemore, but is firmer than Howard 17 (Premier).

Bellmar has not proved so valuable as the other sorts, except with some growers who have made a notable suc-

cess with it. It is somewhat subject to leaf scorch, though not so much so as many other varieties.

LANDSCAPERS AID HOME SHOW.

An attractive display, chiefly of conifers, has been staged by the Illinois Landscape Association in the entrance lobby of the Strauss building, Chicago, in connection with the exhibition being sponsored on the main floor by the Chicago better housing program. This display is in addition to the association's booth on the exhibition floor. The show will continue through May 18.

Members of the Illinois Landscape Association are Beaudry & Associates, Chicago and Oak Lawn, Ill.; Clauss Bros., Chicago; Charles Fiore Nurseries, Highland; F. D. Clavey & Sons, Deerfield; Littleford Landscape Nurseries, Hinsdale; Swain Nelson & Sons Co., Glenview; St. Aubin & Bros., Inc., Addison; Schroeder's Nursery, Morton Grove; Otto N. Stein, Chicago, and C. D. Wagstaff & Co., Evanston.

WIN GOVERNMENT AWARDS.

The Grand View Nursery, 6 Grand View avenue, Mount Vernon, N. Y., has been awarded a contract to landscape the grounds of the Marine hospital at Baltimore, Md., by the procurement division of the United States Treasury Department at Washington, D. C. The contract for grading and planting the grounds of the hospital amounts to \$17,000, with a time limit of 240 days to complete the work.

The Greenville Evergreen Nursery, Greenville, Pa., has been awarded a contract for landscaping the grounds of the post office at Greenville by the procurement division of the Treasury Department. The Greenville Evergreen Nursery's low bid for the work was \$425.

Spruce Gall Aphid

Control in Nursery Plantings

The spruce gall aphid is one of the most important insects attacking nursery plantings of Norway spruce and is frequently responsible for considerable loss to commercial growers. It is also a common pest of Norway spruce in ornamental plantings and to some extent in reforestation plantings. There is much interest, consequently, in investigations being carried on by Dr. F. L. Gambrell, at the New York state agricultural experiment station.

The experiments have been conducted in an experimental planting on the station grounds and in commercial nursery plantings in Ontario, Cayuga and Onondaga counties. This work has extended over a period of six years, 1928-1933 inclusive, and has involved observations on approximately 70,000 trees between the ages of 5 and 15 years. Report of the investigations appears in technical bulletin 225 published by the general station, December, 1934.

The spruce gall aphid attacks Norway spruce principally, but has been observed on Engelmann's and Colorado blue spruce. It has also been recorded by other workers as attacking red, white and black spruce and American hemlock. In western New York it is principally a pest of Norway spruce.

The Sitka gall aphid is frequently a pest of Colorado blue spruce in ornamental plantings in one stage of its life history and on Douglas fir in another stage.

Nature of Injury.

The injury caused by the spruce gall aphid is in the nature of a gall, or enlargement, at the base of the new growth, but in the case of the Sitka gall aphid the entire new growth develops into an elongate gall. The injury from both species naturally affects the normal growth of the twigs, which results in malformation of the trees.

Insofar as has been ascertained, the life history of the spruce gall aphid is limited to spruce without the intervention of an alternate host. Two different types of individuals, viz., winged and wingless females, are present in the life cycle of this insect. The wingless females develop from eggs of the winged, or summer brood of females which emerge from the galls. The nymphs of these wingless females overwinter on the buds and branches, and this is the stage in the life history of the pest against which control measures are directed.

The eggs of the overwintered female are deposited in a mass of from 100 to 200 or more at the base of the buds, while those of the winged females from the galls are laid on the needles in masses containing from 30 to 50 eggs. Gall formation is apparently initiated by the feeding of the overwintered females, while the feeding of the gall-inhabiting nymphs causes the continued development of the gall during the growing period of the tree.

Apparently there is considerable variation in the time of appearance and the length of developmental stages of the insect during different seasons

as well as in degree of infestation as manifested by the presence of galls upon the trees. It is also evident from these studies that the activity of the overwintered females and consequent egg deposition are synchronized with the development of the tree as regards the appearance of new growth.

The mode and extent of migration have not been satisfactorily determined, although evidence obtained in this work indicates that winds may be an important factor. Likewise, the reason why some trees remain uninfested while closely adjoining trees contain many galls is not thoroughly understood. It appears, however, that certain types of Norway spruce are not so susceptible to attack as others.

Recommendations.

Control measures have been conducted over a period of six years in widely separated localities of western New York. In all, some seventy-five materials or combinations and dilutions have been tested. These included lubricating oil emulsions, miscible oils, tar washes, lime-sulphur, Penetrol, nicotine, Derrisol and soaps.

The results of these experiments, both with respect to fall and spring treatments, seem to indicate that a relatively high degree of control was secured with a majority of the materials when the latter were applied in either the fall or spring; likewise, injury to the foliage was not uncommon where high concentrations of oil were used.

Provided the conditions regarding treatment indicated herewith are complied with, the spruce gall aphid can be satisfactorily controlled by one application of any of the following materials in 100 gallons of the spray mixture: Nicotine sulphate, one pint; soap, three pounds; soap (fish oil or laundry), ten pounds; lubricating oils (Diamond paraffin type), having a viscosity of about 100 seconds and an unsulphonated residue of sixty to seventy per cent, one gallon. Miscible oils diluted according to the recommendations of the manufacturers or a two per cent nicotine dust should also prove effective.

With the exception of oil sprays, treatment should be made either in the fall after all the eggs have hatched, usually by October 15, or in the spring before the overwintering nymphs resume their activity, which as a general rule is not later than the latter part of April. Those who prefer to use oil sprays should defer treatment until the spring, so as to minimize the possibility of foliage injury, and should also recognize that applications of oil sprays on spruce trees occasionally may be attended by injury, even if applied in the spring. Because of this risk, the use of oil sprays on choice spruce trees in either the nursery or ornamental planting is somewhat questionable as a general procedure.

Lubricating oils may be emulsified with a 2-2-100 Bordeaux mixture; also with calcium caseinate or lignin pitch at the rate of one pound to 100 gallons of water.

Avoid spraying when the temperature is likely to fall below the freezing point before the trees become thoroughly dry.

In the use of nicotine, either in spray or dust form, best results are secured on calm days when the tem-

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growth as well as the undersurfaces
of the lateral branches toward the tips.

NURSERY FOR TREE STOCK.

A nursery at which to grow timber
stock for replanting burned-over areas
on the Indian reservation at Yakima,
Wash., will be a new project of refor-
estation crews now that the Indian
office has set aside funds to continue
the camps two more years, Thomas L.
Carter, chief forester, has announced.

Donald Clark, manager of the Signal
Peak camp, has gone to the Wind River
nursery, in Columbia national forest,
to obtain seeds and receive instructions
in planting. Later the Yakima nurs-
ery will produce its own seeds.

A beetle control fund of \$50,000 has
been provided, and plans have been
made for cruising 70,000 acres, Mr.
Carter said. The crews will build
ranger stations on the Satus highway,
near Mill creek and near Cougar creek.

RHODE ISLAND NURSERY NOTES.

The F. A. Bartlett Tree Expert Co.,
East Providence, reports unusual ac-
tivity in tree surgery this spring.

The Warwick Avenue Nursery, Edge-
wood, is preparing several acres of ad-
ditional land for nursery propagating
purposes.

The State Line Nurseries, Seekonk,
Mass., contemplate increasing their
range of glass this season for hardy
perennials.

V. A. Hill, manager of the Davey
Tree Expert Co., Providence, reports
heavy bookings for landscape and tree
work.

With the planting of 23,000 white
pine trees in the George Washington
memorial forest in West Gloucester
by members of the George Washington
CCC camp, reforestation of the entire
reservation, comprising 242 acres, will
be completed. When the work is com-
pleted, a total of 89,000 young ever-
green trees will have been planted by
members of the camp. In 1933, 6,000
trees were planted, while last year 60-
000 trees were set out.

THE Johnny Wilcox & Co. Nursery was
opened at Fifteenth street and Newport
boulevard, Newport, Cal., April 20. John
Wilcox, president, is assisted by "Link"
Norman, manager, and Otto Dodd, for-
merly of Beverly Hills, who is in charge
of patio and pool construction.

MISS ELIZABETH BURNHAM, proprietor
of the Shady Lawn Nursery, Ukiah, Cal.,
has erected a new greenhouse, 30x90
feet. Miss Burnham is reported to be the
youngest licensed proprietor of a nursery
in the state. She was received as a mem-
ber of the Business and Professional
Women's Club recently.

THE formal opening of the Quad-City
Nursery Co., Rock Island, Ill., on route
86 and Barstow road, took place April
27, with C. E. Dickhoff, president, in
charge. The nursery is equipped to do
landscape gardening, tree surgery and
trimming, planting and the building of
rock gardens, pools, stepping-stones and
garden furniture.

20,000 **CHERRY**, Montmorency and
Early Richmond, 2-year, XX
and 1 1/2 inch.

5,000 **SPIRÆA**, Vanhouttei, 3 to 4 feet
and 4 to 5 feet.

25,000 **ELMS**, American, Vase and Mo-
line, transplanted, up to 4
inches.

10,000 **MAPLE**, Norway, transplanted,
up to 2 1/4 inches.

3,000 **ARBOR-VITÆ**, Pyramidalis, up
to 8 feet.

400 **PINE**, Mugho, from 2 to 4 feet.
1,000 **SPRUCE**, Norway, sheared, none
better, 2 to 5 feet.

600 **JUNIPER**, Pfitzer's, 5 to 8 feet
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3,000 **ARBOR-VITÆ**, American, and
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ROSE SOCIETY MEETING.

Georgia Group Host.

More than 100 members of the American Rose Society from states as far west as Texas and as far north as Michigan, as well as near-by districts, attended a convention of the American Rose Society held at the Biltmore hotel, Atlanta, Ga., April 29. This was the first of two big meetings of the society this year; the annual business meeting will be held in September at Rochester, N. Y.

The Georgia Rose Society, with J. D. Crump, president, acted as host. Visitors registered at the Biltmore hotel the morning of April 29 and went immediately into the first meeting. Mr. Crump extended the welcome to the visiting delegates, which was responded to by Dr. T. Allen Kirk, Roanoke, Va., a trustee of the American Rose Society, after which the officers of both societies were introduced.

The meeting was then turned over to Dr. J. Horace McFarland, Harrisburg, Pa., president emeritus of the American Rose Society, who acted in the absence of Leonard Barron, now its acting president.

National Rosarium Discussed.

G. A. Stevens, secretary, spoke briefly concerning the national rosarium, which it is proposed to found near Washington whenever the means and opportunity afford. He stressed the fact that no worthier or more enduring monument could be left by some wealthy man desiring to perpetuate his name or that of some loved one.

J. H. Nicolas delivered the address of the morning on "The Rose Is Regional," stressing clearly the adaptation of varieties to different soils, climates and locations.

After Dr. Nicolas' address, there was a brief discussion as to the advisability of continuing the "Proof of the Pudding," which has become an outstanding feature of the American Rose Society's Annual. The meeting was thrown open to questions and answers, most of which turned upon problems of interest to amateur gardeners in the southern districts.

At the close of the meeting, members

were invited to luncheon in the Biltmore hotel and immediately afterward left on a tour of Atlanta rose gardens, which were in full bloom and showed many new varieties.

Banquet.

Weary with sightseeing, the caravan returned to the hotel about 6 o'clock, with barely time enough to give everybody opportunity to get ready for the banquet. The banquet was followed by an address on "Georgia and Georgia Roses," by Rodney Cohen, Augusta. Mr. Cohen brought out the deep relation which used to exist between the rose-growing interests of the south and north and showed how Georgia itself was founded upon the garden idea. He explained that at one time the Augusta-Savannah neighborhood was the rose-growing center of the United States.

Robert Pyle spoke next concerning the accomplishments and aspirations of the American Rose Society and paid tribute to the leadership of Dr. J. Horace McFarland.

L. B. Coddington Given Prize.

The secretary then introduced Mrs. Hally Bradley Hampton, a member of the society's committee on prizes and awards, who presented the Gertrude M. Hubbard gold medal to L. B. Coddington, Murray Hill, N. J., for Rose President Herbert Hoover, judged by the society to be the best rose originated by an American within the past five years. This award was received with cheers.

Early the next morning members of the Georgia and American Rose Societies were taken in automobiles to Flower Acres, the home of Donald Hastings, treasurer of the Georgia Rose Society, where they enjoyed the beautiful garden which he and Mrs. Hastings have made and some pleasant samples of Georgia hospitality. The cavalcade then proceeded through Macon, arriving at noon at Porterfield, the estate of J. H. Porter, where upon his spacious lawns a genuine Georgia barbecue was enjoyed by all the visitors.

The afternoon was spent in visiting the vast rose plantings at Porterfield, which include nearly 1,200 varieties of old and new roses. Mr. Porter makes it a point to obtain plants of every variety of rose he hears about, and he has advanced far toward accomplishing his ambitious aim. Some remarkable examples of roses growing in the shade of a lath house were seen, and many old favorites were found growing vigorously in the border beds surrounding the newer plantations.

Probably the most outstanding roses seen at Porterfield were fine blocks of the brilliant orange rose, Condesa de Sagato, but while that rose was exceedingly brilliant, the more modest and intensely interesting Peach Blossom, a dwarf Wichuraiana type, aroused the interest of discriminating growers. Northern visitors were amazed to see bushes of Talisman four or five feet high growing practically unattended in the public parks of Macon, which seems to have a climate peculiarly suited to roses.

Most of the visitors departed in the afternoon of April 30, but the officers and trustees remained in Macon as the guests of Mr. Crump and Mr. Porter for dinner and much rose discussion

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that evening, leaving Macon early the morning of May 1. A brief stop in Atlanta showed the judges hard at work on the third annual rose show of the Georgia Rose Society.

The officers and members of the American Rose Society are deeply grateful to their Georgia hosts for the many courtesies and instances of true southern hospitality.

VIBURNUM CARLESII.

Wider use should be given Viburnum Carlesii, a many-branched spreading shrub that grows to about four feet in height with a round top. The leaves are broadly ovate, rounded at the base, dull green and smooth above, pale and hairy below. It is considered an aristocrat among the shrubs and an outstanding addition to American planting material. Korea is its native home.

The most valuable feature of this shrub is its fragrant handsome early flowers, produced in dense hemispherical 2 to 3-inch heads at the ends of the branches in April or May. The flowers appear with the leaves, but do not all open at once. From an orange pink in the bud stage, the flowers change first to pink and then to white. The odor is spicy, resembling that of the trailing arbutus. Blue black fruit is ripened in September.

Growth of the shrub is slow. It requires a fairly sunny location, as well as soil that is not too dry. While it is hardy, it should be planted in a protected position.

Propagation of V. Carlesii is accomplished by softwood cuttings. Grafting

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the variety is also practiced, V. Lantana and V. dentatum seedlings being used for stocks and budding being done in July.

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16x16 ins., 5.00	32x32 ins., 16.50
20x20 ins., 7.10	36x36 ins., 21.50
24x24 ins., 9.50	40x40 ins., 25.75

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EXTRA HEAVY	Quantity in bale	Per bale
4 ft. $\frac{1}{2}$ to $\frac{3}{4}$ in. diam.	500	\$8.00
5 ft. $\frac{1}{2}$ to $\frac{3}{4}$ in. diam.	500	10.50
6 ft. $\frac{1}{2}$ to $\frac{3}{4}$ in. diam.	400	10.50
7 ft. $\frac{1}{2}$ to $\frac{3}{4}$ in. diam.	250	11.00
8 ft. $\frac{1}{2}$ to $\frac{3}{4}$ in. diam.	200	9.50
MEDIUM WEIGHT		
2 ft. $\frac{1}{2}$ in. diam.	1000	5.50
3 ft. $\frac{1}{2}$ in. diam.	1000	6.00
4 ft. $\frac{1}{2}$ in. diam.	1000	7.00
5 ft. $\frac{1}{2}$ in. diam.	1000	8.00

RAFFIA

Four best brands of natural—also colored. Bale lots or less.

GRANULATED PEAT

Finely pulverized horticultural grade in largest bales, 22 bushels up. Carloads or less. Low prices.

McHUTCHISON & CO.
95 CHAMBERS ST., NEW YORK

WHAT WOULD YOU SAY TO THIS CUSTOMER?



● Do you know that "Black Leaf 40" will keep the dogs away?

Just make a spray using $1\frac{1}{2}$ teaspoonfuls of "Black Leaf 40" to a gallon of water (use no soap). Spray this on the lower branches of shrubbery and evergreens. Harmless to dogs. They do not like the odor and go elsewhere. Tell your customers about this discovery. It will be a real service to them.

"Black Leaf 40" **PROTECTS SHRUBBERY FROM DOG NUISANCE**
Tobacco By-Products & Chemical Corp.,
Incorporated
Louisville, Kentucky

Write for Samples and Price List

SAXOLIN

DUPLEX CRINKLED

**COSTS
LESS THAN
BURLAP**

**MAKES
CLEAN - NEAT
BUNDLES**

**DOES A
BETTER JOB**

**KEEPS THE
MOISTURE IN**



We will send full size working samples that will prove in your own shipping room that **SAXOLIN** is superior to any other wrapper for retaining dirt and moisture around the roots and delivering a clean, attractive package.

SAXOLIN is two sheets of kraft paper cemented with asphalt filler and crinkled to stretch and conform to shape of bundle.

It's waterproof—tough and easy to handle.

If you are using any special size material for wrapping tell us the size and we will send samples. Try **SAXOLIN** now and be ready for your next shipping season.

CHASE BAG CO.

Specialty Dept. • Cleveland, Ohio

WRITE FOR 10-DAY TRIAL OFFER

on this High Pressure PARAGON SPRAYER



One or two wheel truck

Test it for yourself. Compare results with what you have been getting from your present sprayer. Use any spray solution or cold water paint. Spray your nursery stock, whitewash your greenhouses, barns and tool sheds, **inside and out**. Note how easily this **Paragon** delivers 300 to 400 lbs. uniform pressure at the nozzle with little effort at the pump handle. Automatic agitator prevents solution from settling. We guarantee it **never to clog** while in use. Ten days' trial costs you nothing if not satisfied. If your dealer does not sell the **Paragon**, mail the coupon today.

THE CAMPBELL-HAUSFELD CO., 403 State Ave., HARRISON, OHIO.

Send prices and details as per advertisement in American Nurseryman for May 15.

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